V05608

—22-3, Shibuya 2-chome, Shibuya-ku, Tokyo, 150 Japan Tel: 03-3400-1121 Fax: 03-3400-8679 Telex: J22908, J22152
-50 Kamitoda, Toda-shi, Saitama, 335 Japan Tel: 048-443-1111 Telex: J2962628 CLAFAC-J

clarion Service Manual

Published by Service Information Section

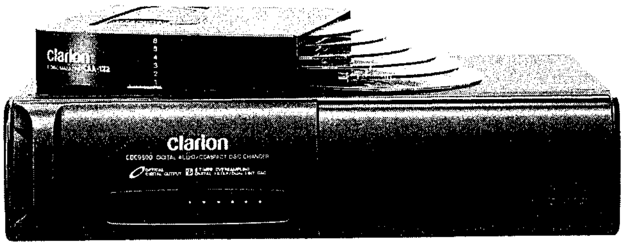


Photo is CDC9600

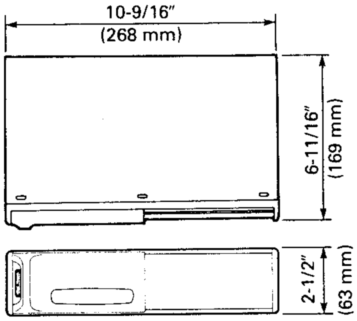
6 DISC COMPACT DISC CHANGER

Model 2060 (PE-2073B)
CDC9600 (PE-2073E)

■SPECIFICATIONS:

Sampling Frequency	44.1 kHz (8 times oversampling)
Frequency Response	5 Hz to 20 kHz
Dynamic Range	95 dB (1 kHz)
Signal-to-Noise Ratio	105 dB
Wow and Flutter	Unmeasurable
Power Supply	14.4 V (10.8 V to 15.6 V)
Power Consumption	Less than 1A
Unit Weight	2.7 kg

External Dimensions


10-9/16"
(268 mm)
6-11/16"
(169 mm)
2-1/2"
(63 mm)

※ Specifications and the design are subject to change without notice due to improvements.

■COMPONENTS:

● PE-2073B-A/PE-2073E-A

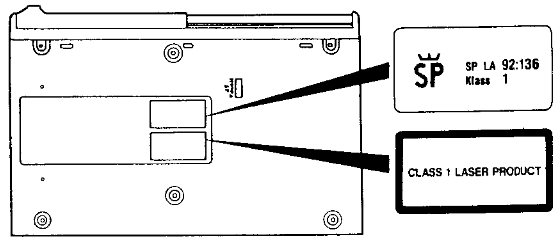
Mounting bracket A	300-9547-00	1
Mounting bracket B	300-9548-00	2
Mounting bracket C	300-9582-00	1
Extension lead	854-2085-00(13P)	1
Accessory box	CAA-122-114	1
Parts bag		1
{ Clamp	321-0774-00	1
Lead holder	335-0833-01	2
Machine screw	714-5006-79(M5×6)	1
M6 wing nut	722-0545-00	4
D-sems-hex-bolt	734-5008-37(M5×8)	4
Parts bag		1
{ Rubber cushion	345-7357-00	2

■FEATURES:

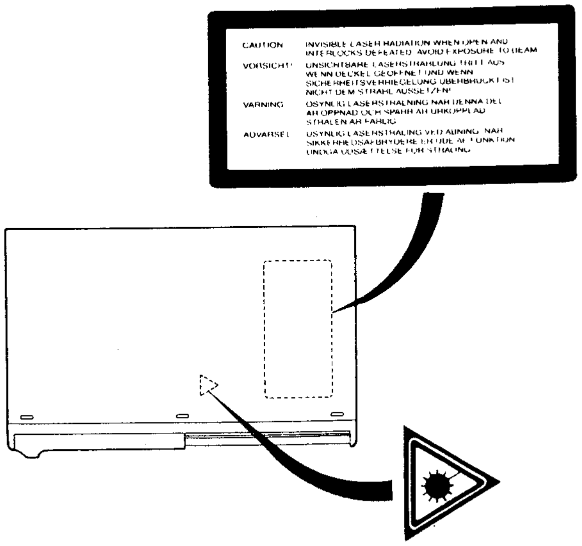
- ■ **6 Disc CD Changer**
- ■ **Ultra Compact Chassis**
- ■ **120° Adjustable Mounting Angle**
- ■ **Spring-Loaded/Oil-Damped Suspension System**
- ■ **Magazine Slot Illumination**
- ■ **Disc Indicator**
- ■ **Digital Output for Fiber Optic Cable**
- ■ **8 Times Over Sampling Digital Filter**
- ■ **Dual 1 Bit DAC**
- ■ **Zero Bit Detector Mute Circuit**

■CAUTIONS: CDC9600

CD Changer Unit


SP LA 92:136
Klass 1
CLASS 1 LASER PRODUCT

CD Changer Unit Top View


CAUTION INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM
VORSICHT! UNSICHTBARE LASERSTRAHLUNG TRITT AUS WENN DECKEL GEOFFNET UND WENN SICHERHEITSVERRIEGELUNG UBERBRUCKT IST NICHT DEM STRAHL AUSSETZEN!
VARNING OSYNLIG LASERSTRALNING NAR DENNA DEL AR OPPNAD OCH SPARR AR URKOPPLAD STRALEN AR FARLIG
ADVARSEL USYNLIG LASERSTRALING VED ABNING NAR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGA UDSAETTELSE FOR STRALING

CAUTIONS:

This appliance contains a laser system and is classified as a "CLASS 1 LASER PRODUCT". To use this model properly, read this Owner's Manual carefully and keep this manual for your future reference. In case of any trouble with this player, please contact your nearest "AUTHORIZED service station". To prevent direct exposure to the laser beam, do not try to open the enclosure.

CAUTION

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED IN THE OWNER'S MANUAL MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

■SPECIAL NOTES:

1. At the time of replacing the pick-up unit, take measures for electrostatic breakage (such as, protection with a short pin) with attention given to handling.
2. At the time of diassembling the unit, be sure to turn off the power. The connection and disconnection of a connector during switching-on may break the internal IC.

(1) Breakage caused by surge current and static electricity

Upon flow of large current to LD, the deterioration of LD is enhanced by strong light which is emitted by LD itself even in a very short time or LD may be broken.

The LD drive circuit should be free from flow-in of surge current by the switch, etc. Careless handling allows static electricity from the human body to be applied, causing instantaneous breakage.

For safety's sake, be sure to ground the human body, measuring instruments, and tools at mounting time. Place the ground mat on the working bench, floor, etc. for effective grounding. The metal portion of a soldering iron used should be grounded or its insulation resistance after 5 minutes since the soldering iron was energized should be more than 10MΩ (500VDC) and the temperature of the tip of the soldering should be less than 320°C (30W).

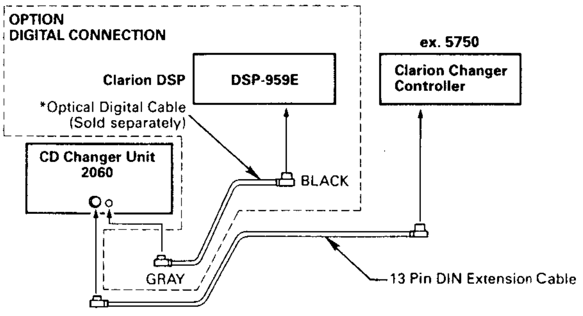
(2) 2-axle section

- Lens cleaning

  Contamination, such as dirt and dust, changes the performance of an objective lens.

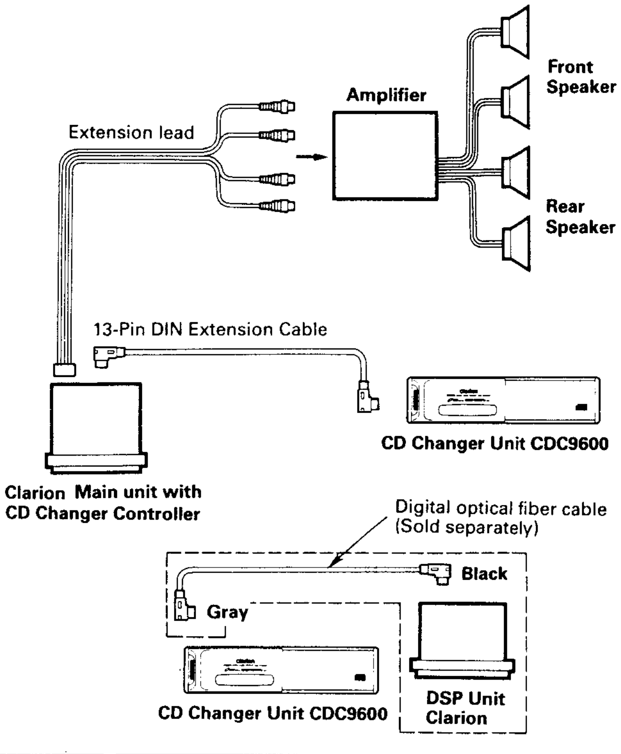
  In cleaning, swab the lens gently with lens paper immersed in isopropyl alcohol.

■WIRE CONNECTION: 2060


OPTION
DIGITAL CONNECTION
Clarion DSP
DSP-959E
*Optical Digital Cable
(Sold separately)
ex. 5750
Clarion Changer Controller
CD Changer Unit
2060
BLACK
GRAY
13 Pin DIN Extension Cable

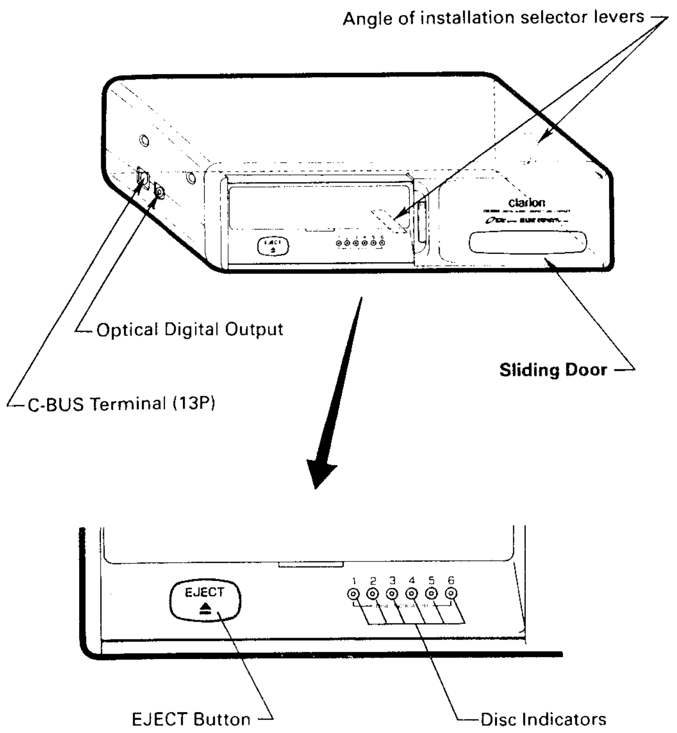
Note: ✻ OPTICAL DIGITAL CABLE (Sold separately)
...DCA-001-100: 16 foot Length (5 m)
...DCA-002-100: 5 foot Length (1.5 m)

■WIRE CONNECTION: CDC9600


Front Speaker
Amplifier
Extension lead
Rear Speaker
13-Pin DIN Extension Cable
CD Changer Unit CDC9600
Clarion Main unit with
CD Changer Controller
Digital optical fiber cable
(Sold separately)
Black
Gray
CD Changer Unit CDC9600
DSP Unit
Clarion

NOTE:
The main unit with D/A control lead can be connected with a digital optical fiber cable.

■OPERATION:


Angle of installation selector levers
clarion
EJECT
Optical Digital Output
Sliding Door
C-BUS Terminal (13P)
EJECT
1 2 3 4 5 6
EJECT Button
Disc Indicators

✱ **EJECT BUTTON**
Ejects the magazine.

✱ **DISC ILLUMINATION**
Illumination is on during playback and when the unit is receiving power.

✱ **DISC INDICATORS**
Indicates operation of each of the six discs as follows:

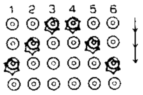
1) **PLAY/TRACK UP/DOWN (1,2,3,4,5,6)**
Playback CD disk number indicator flashes.

2) **FF/FB**
Playback CD disc number indicator flashes rapidly.

3) **DISC CHECK**
All disc indicator lights flash during checking.
When checking is finished, indicators corresponding to loaded discs in the magazine illuminate.

4) **DISC CHANGE**
The indicator flashes showing which disc has been selected.

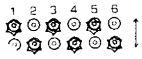
5) **EJECT**



: Indicators continue to light as shown in the diagram until eject is completed.

: Indicators flash when EJECT is pressed. When the disc is fully ejected, the indicators flash again.

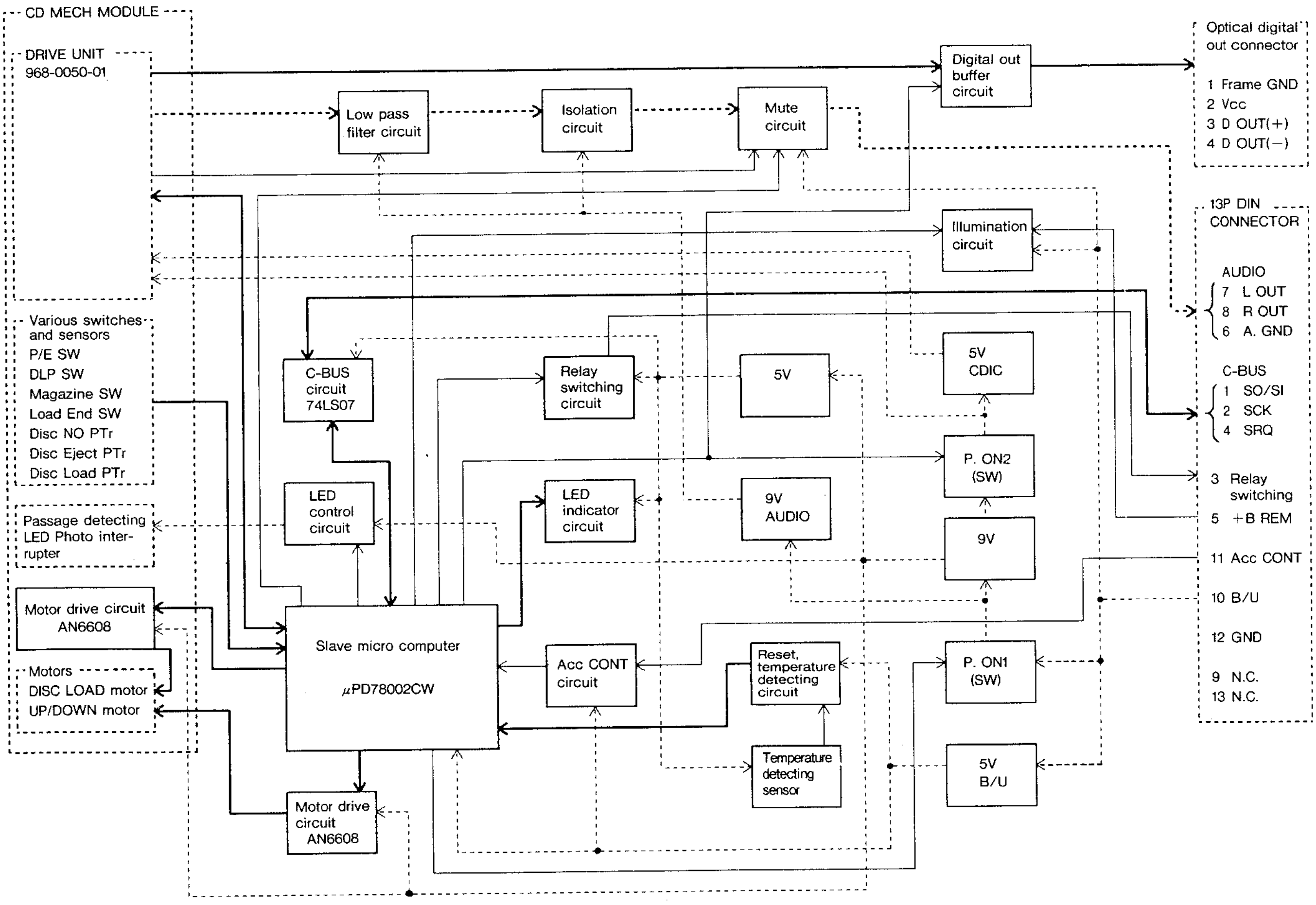
6) **ERROR**



: Indicators light in alternate patterns as in the diagram.

7) **STOP**
Lights whether magazine is full or empty.

■GENERAL BLOCK DIAGRAM:


CD MECH MODULE
DRIVE UNIT
968-0050-01
Low pass filter circuit
Isolation circuit
Mute circuit
Digital out buffer circuit
Optical digital out connector
1 Frame GND
2 Vcc
3 D OUT(+)
4 D OUT(−)
13P DIN CONNECTOR
Illumination circuit
AUDIO
7 L OUT
8 R OUT
6 A. GND
Various switches and sensors
P/E SW
DLP SW
Magazine SW
Load End SW
Disc NO PTr
Disc Eject PTr
Disc Load PTr
C-BUS circuit 74LS07
Relay switching circuit
5V
5V CDIC
C-BUS
1 SO/SI
2 SCK
4 SRQ
P. ON2 (SW)
3 Relay switching
Passage detecting LED Photo inter-rupter
LED control circuit
LED indicator circuit
9V AUDIO
9V
5 +B REM
11 Acc CONT
10 B/U
12 GND
9 N.C.
13 N.C.
Motor drive circuit AN6608
Motors
DISC LOAD motor
UP/DOWN motor
Slave micro computer
μPD78002CW
Acc CONT circuit
Reset, temperature detecting circuit
P. ON1 (SW)
Temperature detecting sensor
5V B/U
Motor drive circuit AN6608

■TROUBLE SHOOTING:

1. Error Display (LED Blinking)

↓ ○●○●○●
↓ ●○●○●○
Repetition

① **Temperature Error**

In case an outside temperature of 70°C or more is continued, the operation is automatically stopped to protect the semiconductor laser section.

In this case, at the moment the blinking of LED is released after the temperature of this unit was lowered, the operation can be restored by the controller.

② **Mechanical Error**

A mechanical error occurs when the sensors, switches, etc. become defective.

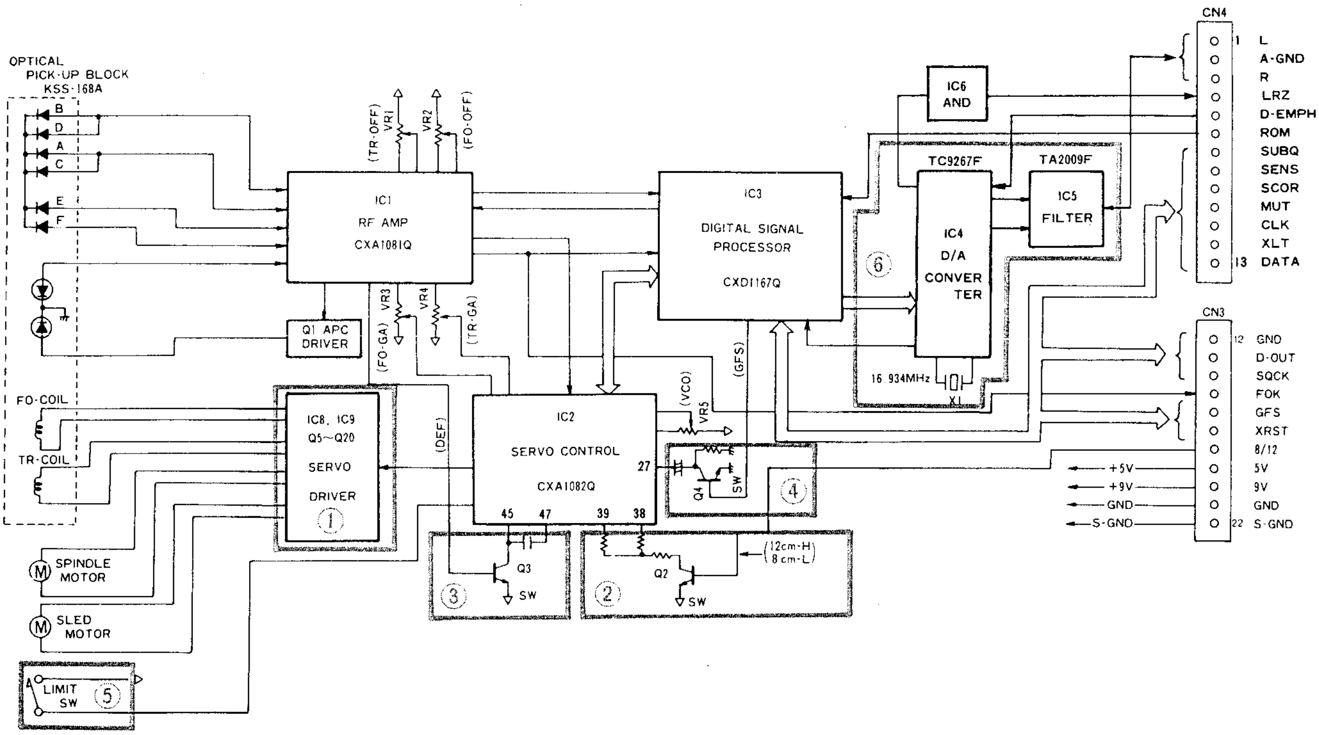
In this case, the mechanical operation will stop halfway.

∗ Removing the disc

In the above case, as the disc is chucked, press the eject key to eject the magazine only. Then, take away all discs from the magazine, insert the magazine, and press the eject key again.

After loading the disc into the position of disc No. 1 in the magazine, eject the magazine. The insertion of the next magazine after the disc removed provides the normal operation.

■BLOCK DIAGRAM OF DRIVE UNIT: 968-0032-00


OPTICAL PICK-UP BLOCK KSS-168A
B
D
A
C
E
F
FO-COIL
TR-COIL
(TR-OFF) VR1
VR2 (FO-OFF)
IC1 RF AMP CXA1081Q
Q1 APC DRIVER
(FO-GA) VR3
VR4 (TR-GA)
IC8, IC9 Q5~Q20 SERVO DRIVER ①
(DEF)
IC2 SERVO CONTROL CXA1082Q
27
45
47
39
38
(VCO) VR5
(GFS)
Q4
SW
④
Q3
SW
③
Q2
SW
②
(12cm-H 8 cm-L)
SPINDLE MOTOR
SLED MOTOR
LIMIT SW ⑤
IC3 DIGITAL SIGNAL PROCESSOR CXD1167Q
IC6 AND
TC9267F
TA2009F
IC4 D/A CONVERTER
IC5 FILTER
⑥
16.934MHz
X1
CN4
1 L
A-GND
R
LRZ
D-EMPH
ROM
SUBQ
SENS
SCOR
MUT
CLK
XLT
13 DATA
CN3
12 GND
D-OUT
SQCK
FOK
GFS
XRST
8/12
5V
9V
GND
22 S-GND
+5V
+9V
GND
S-GND

①**<Servo Driver Block>**

The BTL circuit consisting the power TR and operating amplifier allows the BTL operation to drive the focus coil, tracking coil, spindle motor; and thread motor.

②**<Spindle Servo Gain Switching Block>**

This block consisting of Q2 switches the spindle servo system gain by 8-cm and 12-cm discs.

③**<Antishock Control Block>**

This block consisting of Q3 controls the antishock circuit at the time of detecting a defect signal.

④**<Capture Range Control Block>**

This block consisting of Q4 controls the PLL capture range.

⑤**<Limit SW>**

This switch detects that the pick-up entered the TOC area.

⑥**<D/A Converter, Filter>**

By removing the noise with the Filter IC (TA2009F) perfectly, D/A conversion system is composed the signal of differential output from DAC IC (TC9267F).

■PROCEDURE FOR REPAIR AND ADJUSTMENT:

1) Cautions

- ○ This unit, as operates on single power supply, operates on the basis of various mid-point potential (such as, 2.5V and 4.7V mid points).
- ○ When observing the operating state from the reference by an oscilloscope, connect CH1 GND to the mid point for measurement. The other probe GND should not be connected anywhere.
- ○ When measuring the laser current, the mis-connection of the measuring point may damage the laser (in the pick-up section).

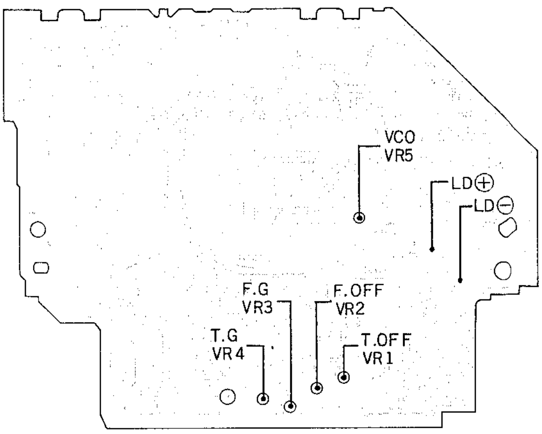
2) Test Disc

- ○ SONY TYPE4 (YEDS18) 12cm
- ○ ABEX MODEL TCD-783 8cm

3) Follow the precautions in handling the pick-up of special notes on page 2.

4) Adjusting order

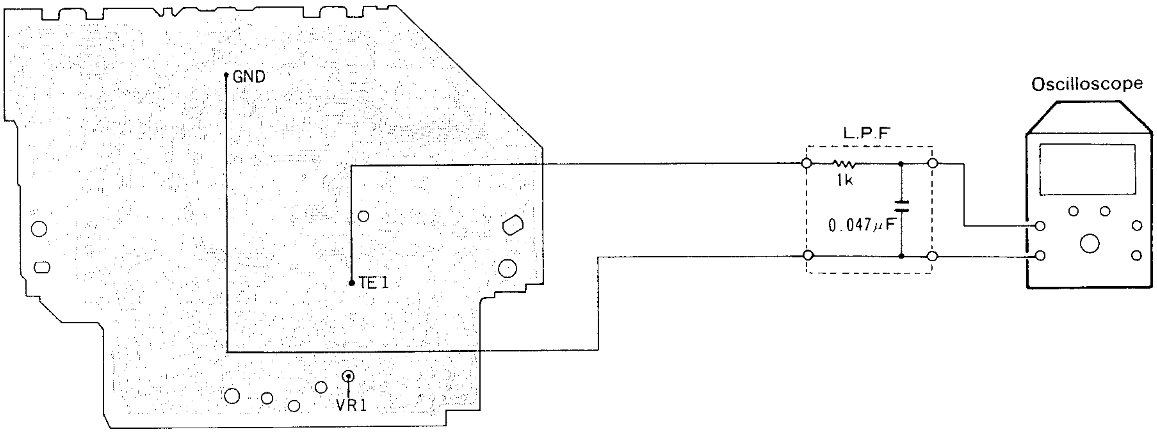
1. Tracking offset
2. Focus offset
3. Focus gain
4. Tracking gain



■Adjusting Tracking Offset

- ● **Purpose**
  To optimize the EF balance of the tracking servo.
- ● **When adjustment is incomplete**
  It takes a long time for search. The carriage runs away.
- ● **Measuring instrument**
  Oscilloscope
- ● **Measuring point**
  TP TE1
- ● **Test disc and setting state**
  SONY TYPE4, normal mode
- ● **Adjustment** : VR1

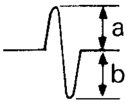
Connection diagram



Adjusting procesure

1. Make sure that the power is turned off and connect the measuring instrument as indicated in the above diagram.
2. Play back the first music of SONY TYPE4.
3. Perform the manual search and check the state of TR Jump (track jump) by an oscilloscope.

Adjust the tracking offset adjusting volume (VR1) so that the waveform may become symmetrical in both forward and reverse modes.

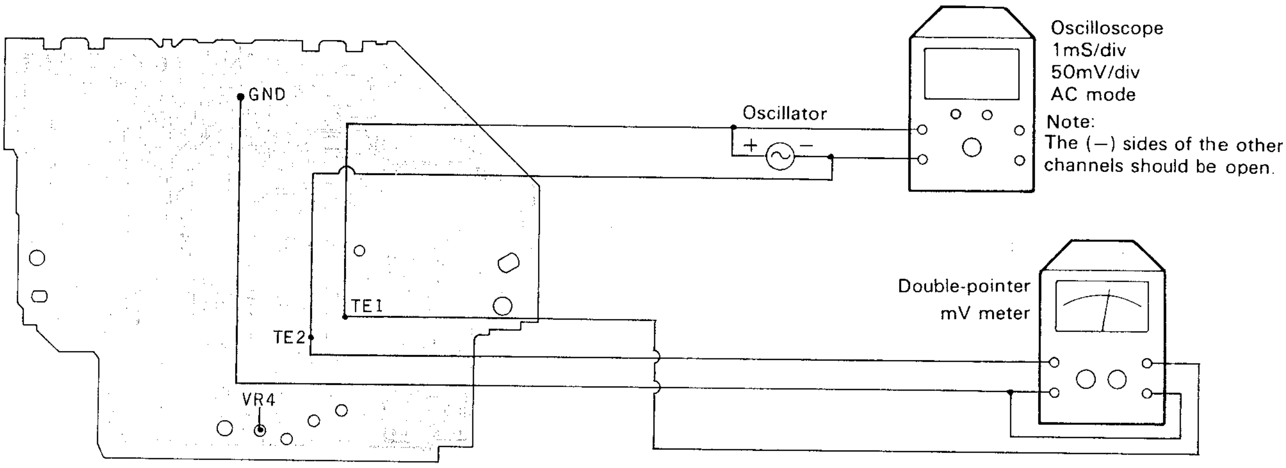


Adjust so as to be a ≒ b.

■Adjusting the Tracking Servo Loop Gain

- **Purpose**
  To adjust the tracking servo loop gain to be optimum value.
- **When adjustment is incomplete**
  The playability and vibration proof are deteriorated.
- **Measuring instrument**
  Oscillator, double-pointer mV meter
- **Measuring point**
  SERTR1, SERTR2, TP, TE1, TE2
- **Test disc and setting state**
  SONY TYPE4, normal mode
- **Adjustment** : VR4

Connection diagram



Note:
The (−) sides of the other channels should be open.

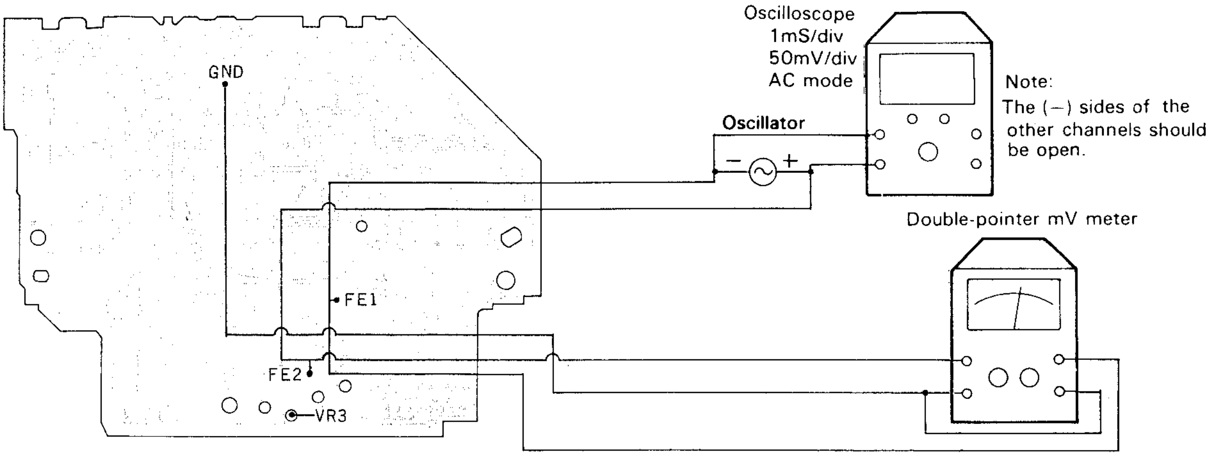
Adjusting procedure

1. Preset the oscillator. Set the output amplitude with no load to be 1Vp-p (at 1kHz).
   Note: The set value of the output level varies slightly depending on the oscillator. This set value is the one when the oscillator of about 500Ω output impedance is used. Adjustment should be made under the condition in which the servo can be activated stably even after the output of the oscillator was applied, causing no mistracking. Low output impedance provides low set output.
2. Make sure that the power is turned off and connect the measuring instruments as indicated in the above diagram.
3. Play back the first music of SONY TYPE4.
4. Adjust the tracking gain adjusting volume (VR4) so that the error of the double-pointer mV meter may be not more than 0±0.5dB (under the condition in which 1kHz output is generated from the oscillator).

■Adjusting the Focus Servo Loop Gain

- **Purpose**
  To adjust the focus servo loop gain to be optimum value.
- **When adjustment is incomplete**
  The playability and vibration proof are deteriorated. S detection is apt to fail.
- **Measuring instrument**
  Oscillator, double-pointer mV meter
- **Measuring point**
  TP FE1, FE2
- **Test disc and setting state**
  SONY TYPE4, normal mode
- **Adjustment** : VR3

Connection diagram


GND
FE1
FE2
VR3
Oscilloscope
1mS/div
50mV/div
AC mode
Oscillator
Note:
The (−) sides of the other channels should be open.
Double-pointer mV meter

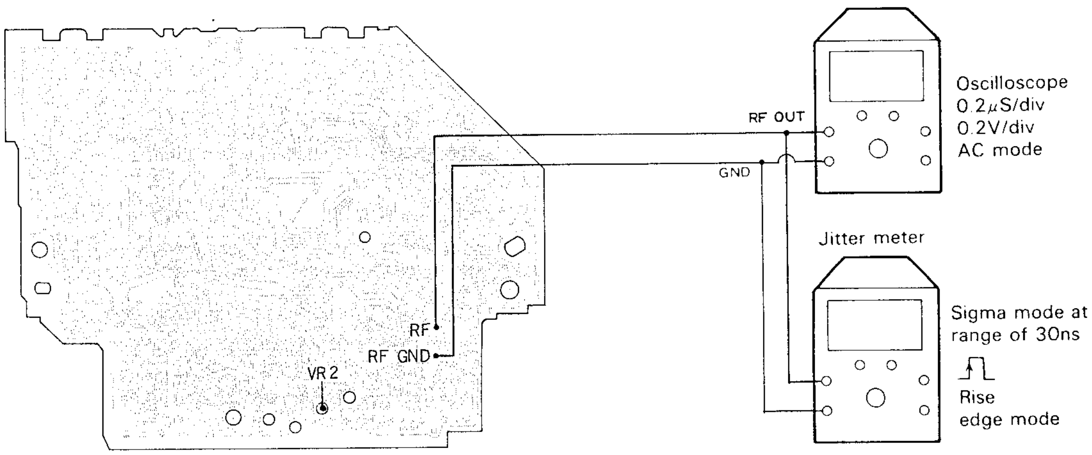
Adjusting procedure

1. Preset the oscillator. Set the output amplitude with no load to be 1Vp-p (at 1kHz).
   Note: The set value of the output level varies slightly depending on the oscillator. This set value is the one when the oscillator of about 500Ω output impedance is used. Adjustment should be made under the condition in which the servo can be activated stably even after the output of the oscillator was applied, causing no mistracking. Low output impedance provides low set output.
2. Make sure that the power is turned off and connect the measuring instruments as indicated in the above diagram.
3. Play back the first music of SONY TYPE4 in the normal mode.
4. Adjust the tracking gain adjusting volume (VR3) so that the error of the double-pointer mV meter may be not more than 0±0.5dB (under the condition in which 1kHz output is genereated from the oscillator).

■Adjusting the Focus Offset

- **Purpose**
  To adjust the focus servo bias to be optimum value.
- **When adjustment is incomplete**
  The focus is hard to be closed. Playability is deteriorated.
- **Measuring instrument**
  Oscilloscope
- **Measuring point**
  RF
- **Test disc and setting state**
  SONY TYPE4, normal mode
- **Adjustment** : VR2

Connection diagram


RF OUT
GND
Oscilloscope
0.2μS/div
0.2V/div
AC mode
Jitter meter
Sigma mode at range of 30ns
Rise edge mode
RF
RF GND
VR2

Adjusting procedure

1. Play back the first music in the normal mode.
2. Connect the RF OUT to the jitter meter (Meguro) and adjust the focus offset adjusting volume (VR2) so that the jitter may be optimized.

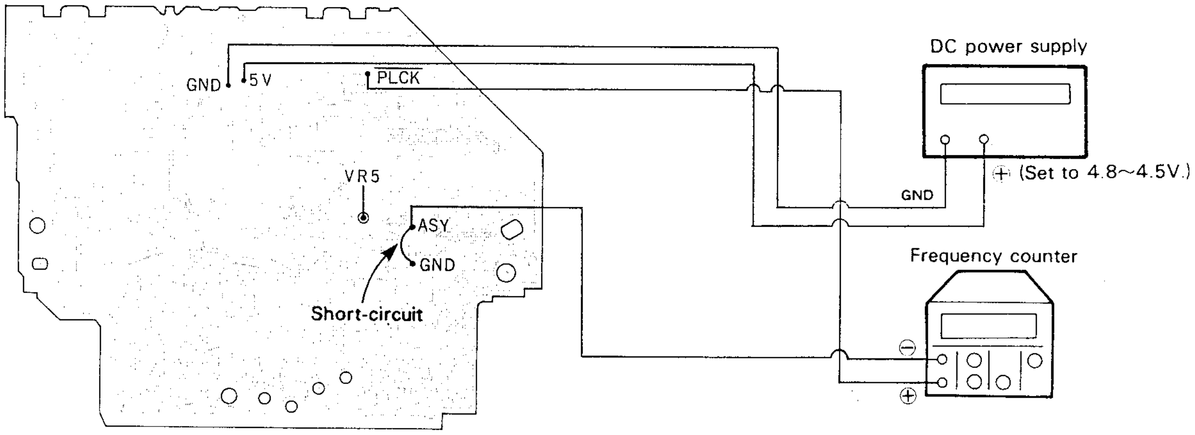
   (When there is no jitter meter, observe the RF OUT based on GND by an oscilloscope and adjust VR2 so that RF may be maximized and the eye pattern may be omptimized.)

Note: Use the probe of 10 : 1 for connection to the jitter meter.

■Adjusting VCO Free-run Frequency

- **Purpose**
  To adjust the free-run frequency of reference clock for EFM decoder to be optimum value.
- **When adjustment is incomplete**
  Spindle lock is impossible. The sound is not emitted or breaks.
  The long access time is long. (22 music → 1 music or 1 music → 22 music by SONY TYPE4).
- **Measuring instrument**
  Frequency counter, various jigs for test mode
- **Measuring point**
  Pin 70 of $\overline{\text{PLCK}}$ CXD1167
- **Adjustment** : VR5

Connection diagram



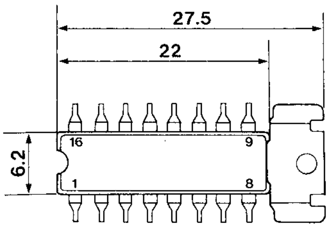
1. Remove the mechanical module from the set.
2. Short-circuit ASY to GND.
3. Connect A-Vcc and 5V to the DC power supply.
4. Turn ON the power.
5. Read the numeric value from the frequency counter.
6. Adjust to be F=4.20MHz± 10kHz.
7. Turn OFF the power.
8. Disconnect the connection.

■EXPLANATION OF IC's:

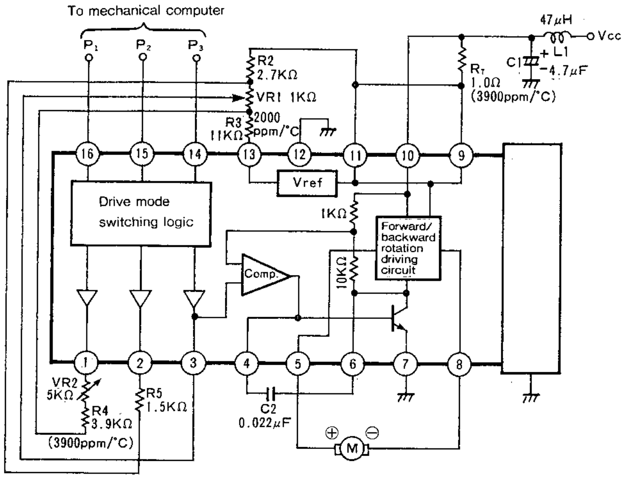
※IC's other than explained below are described in Service Manual 「EXPLANATION OF IC's」 Vol.2~Vol.4.

■AN6608 051-1765-00 2-speed electronic governor IC for forward/backward rotation of DC motor

Outward Form

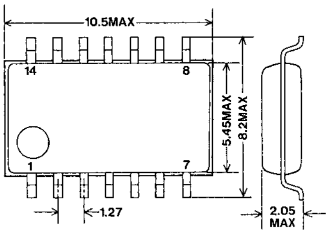

27.5
22
6.2
16
9
1
8

Block Diagram

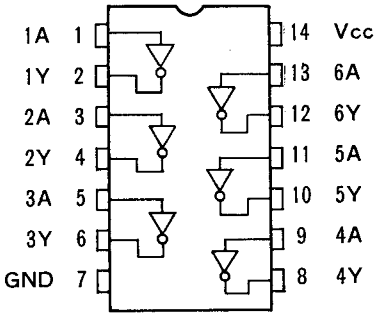

To mechanical computer
P1
P2
P3
R2
2.7KΩ
VR1 1KΩ
R3
11KΩ
2000 ppm/°C
47μH
Vcc
L1
C1
4.7μF
RT
1.0Ω
(3900ppm/°C)
16
15
14
13
12
11
10
9
Vref
Drive mode switching logic
1KΩ
Forward/backward rotation driving circuit
10KΩ
Comp.
1
2
3
4
5
6
7
8
VR2
5KΩ
R4
3.9KΩ
(3900ppm/°C)
R5
1.5KΩ
C2
0.022μF
M

■MC74HCU04F 051-0859-36 HEX INVERTER

Outward Form

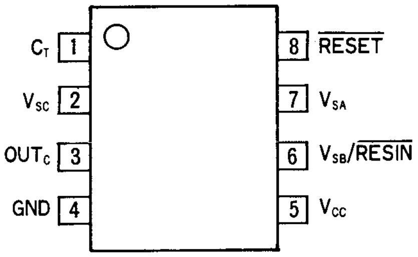

10.5MAX
14
8
1
7
5.45MAX
8.2MAX
1.27
2.05 MAX

Terminal Connection


1A 1
1Y 2
2A 3
2Y 4
3A 5
3Y 6
GND 7
14 Vcc
13 6A
12 6Y
11 5A
10 5Y
9 4A
8 4Y

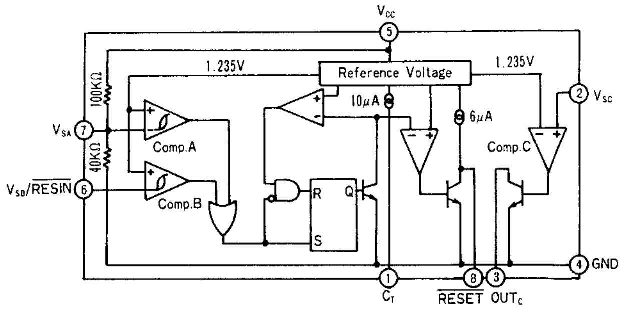
■NJM2103M 051-0869-55 System Reset IC

Terminal Connection


CT 1
VSC 2
OUTC 3
GND 4
8 RESET
7 VSA
6 VSB/RESIN
5 VCC

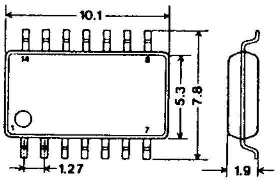
(Top View)

Block Diagram

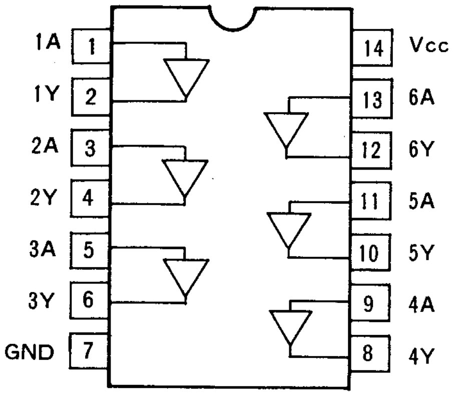

Vcc
5
1.235V
Reference Voltage
1.235V
2 Vsc
100KΩ
40KΩ
VSA 7
VSB/RESIN 6
Comp.A
Comp.B
10μA
6μA
Comp.C
R
Q
S
4 GND
1
CT
8
RESET
3
OUTC

■SN74LS07NS 051-0160-06 6 Circuit Buffer/Driver Gate

Outward Form


10.1
14
8
1
7
5.3
7.8
1.27
1.9

Terminal Connection

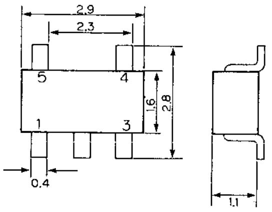

1A 1
1Y 2
2A 3
2Y 4
3A 5
3Y 6
GND 7
14 Vcc
13 6A
12 6Y
11 5A
10 5Y
9 4A
8 4Y

Truth Table

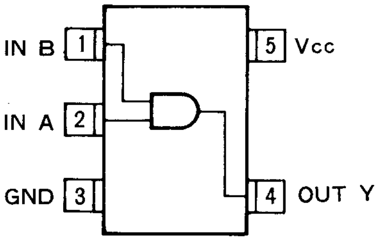
A	Y
H	H
L	L

■SC7S08F 051-1738-35
TC7S08F 051-1738-05 2 Input And Gate

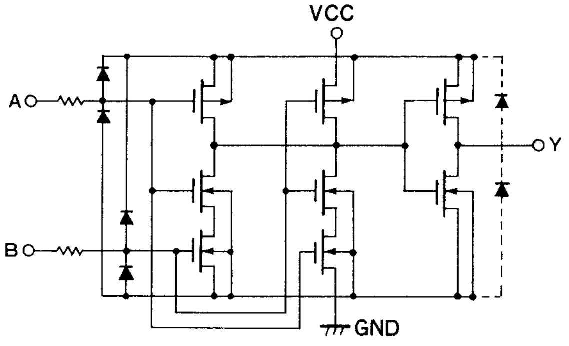
Outward Form


2.9
2.3
5
4
1
3
1.6
2.8
0.4
1.1

Terminal Connection

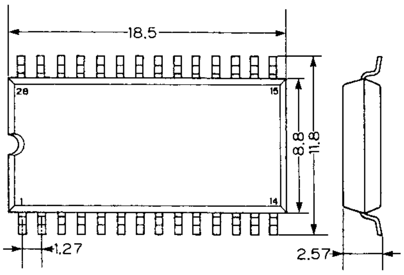

IN B 1
IN A 2
GND 3
5 Vcc
4 OUT Y

Block Diagram

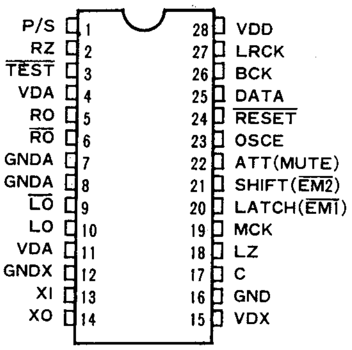


■TC9267F 051-1766-05 D/A Converter With Digital Filter

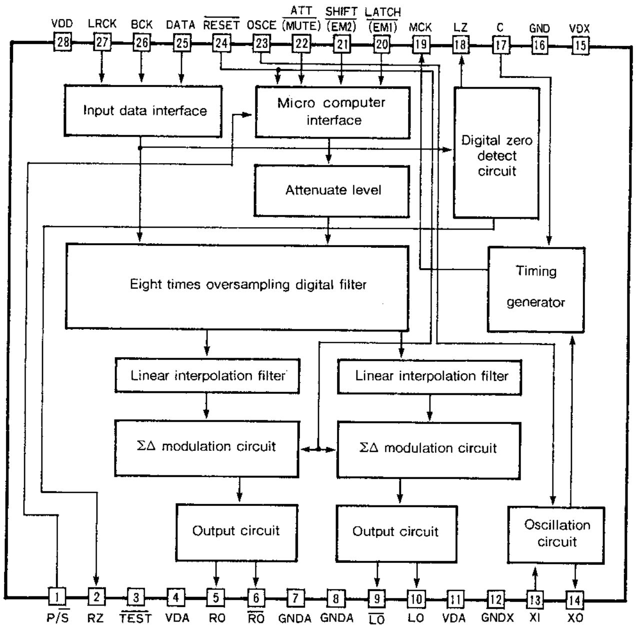
Outward Form


18.5
28
15
1
14
8.8
11.8
1.27
2.57

Terminal Connection


P/S 1
RZ 2
TEST 3
VDA 4
RO 5
RO 6
GNDA 7
GNDA 8
LO 9
LO 10
VDA 11
GNDX 12
XI 13
XO 14
28 VDD
27 LRCK
26 BCK
25 DATA
24 RESET
23 OSCE
22 ATT(MUTE)
21 SHIFT(EM2)
20 LATCH(EMI)
19 MCK
18 LZ
17 C
16 GND
15 VDX

Block Diagram

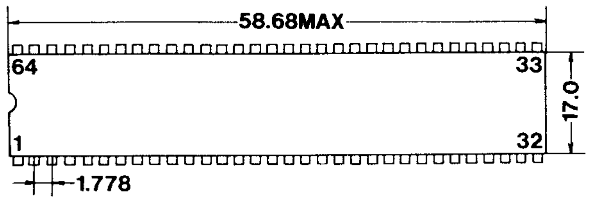

VDD 28
LRCK 27
BCK 26
DATA 25
RESET 24
OSCE 23
ATT (MUTE) 22
SHIFT (EM2) 21
LATCH (EMI) 20
MCK 19
LZ 18
C 17
GND 16
VDX 15
Input data interface
Micro computer interface
Digital zero detect circuit
Attenuate level
Eight times oversampling digital filter
Timing generator
Linear interpolation filter
Linear interpolation filter
ΣΔ modulation circuit
ΣΔ modulation circuit
Output circuit
Output circuit
Oscillation circuit
1 P/S
2 RZ
3 TEST
4 VDA
5 RO
6 RO
7 GNDA
8 GNDA
9 LO
10 LO
11 VDA
12 GNDX
13 XI
14 XO

Pin Description

Pin No.	Pin Name	I/O	Function
1	$P/\overline{S}$	I	Pin for switching between serial and parallel control.
2	RZ	O	Pin for output of R-channel digital zero detection signal.
3	$\overline{\text{TEST}}$	I	Test pin. This pin is usually used at Low level.
4	VDA	–	Analog power pin for R-channel DA converter.
5	RO	O	Pin for normal output of R-channel data.
6	$\overline{\text{RO}}$	O	Pin for reversal output of R-channel data.
7	GNDA	–	Analog GND pin for R-channel DA converter.
8	GNDA	–	Analog GND pin for L-channel DA converter.
9	$\overline{\text{LO}}$	O	Pin for reversal output of L-channel data.
10	LO	O	Pin for normal output of L-channel data.
11	VDA	–	Analog power pin for L-channel DA converter.
12	GNDX	–	GND pin for oscillating element.
13	XI	I	Pins for connection of crystal oscillator. These pins generate clock signals necessary for the system.
14	XO	O	
15	VDX	–	Power pin for oscillating element.
16	GND	–	GND pin for logic element.
17	C	I	Pin for selection of clock signal.
18	LZ	O	Pin for output of L-channel digital zero detection signal.
19	MCK	O	Pin for output of system clock signal.
20	LATCH ($\overline{\text{EM1}}$)	I	Pin for input of attenuator data latch signal in serial control. Pin for selection of deemphasis filter mode in parallel control.
21	SHIFT ($\overline{\text{EM2}}$)	I	Pin for input of attenuator shift clock signal in serial control. Pin for selection of deemphasis filter mode in parallel control.
22	ATT (MUTE)	I	Pin for input of attenuator data in serial control. Pin for muting in parallel control. Mute is turned on at Low level.
23	OSCE	I	Pin for system clock control. The system clock stops at Low level.
24	$\overline{\text{RESET}}$	I	Reset pin.
25	DATA	I	Pin for input of data.
26	BCK	I	Pin for input of bit clock signal.
27	LRCK	I	Pin for input of L/R clock signal.
28	VDD	–	Power pin for logic element.

■μPD78002CW-012 051-1779-00 CD Changer Controller

Outward Form



Terminal Description

Pin No.	Symbol	I/O	Function
1 ~ 5	N.C	–	No connection.
6	SSI	I/O	A terminal which receives or sends SO/SI signal of C-BUS. SO: Used as data output, BUSY signal and READY signal. SI: A mode in which address or command from the master CPU is being waited without data input and communication.
7	SSO		
8	SCK	I	A terminal which receives serial clock from C-BUS.
9	SRQ	O	A terminal which sends C-BUS service request. The terminal is turned from "H" to "L" to have the master read data informing a change in the status of a slave CPU. The terminal is turned from "L" to "H" after an address has been received from the master CPU.
10	Inserting window illumination	O	A terminal which controls the inserting window illumination. The illumination is turned ON when the terminal is turned to "H".
11	RELAY	O	A terminal which controls AUDIO RELAY of the external select box. The terminal is controlled by the command of C-BUS. Normally, "H" is outputted when the autochanger is in the PLAY mode.
12	P ON 2	O	A terminal which controls two system powers. When the autochanger is in the PLAY mode, this port is turned to "H" to supply power to CD ICs "CXA1082" and "CXD1167". In the STOP mode when the spindle motor stops, the terminal is turned to "L" to turn the power of CD IC OFF.
13	P ON 1	O	A terminal which controls one system power. When ACC detection is turned to "H" (ACC CONT from the head unit is turned "L") or when EJECT detection is turned "H" with the ACC detection turned "L", this port is turned to "H" to turn the power of entire system ON.
14	D EMPH	O	A terminal which controls de-emphasis. It outputs "L" when a disc provided with emphasis is played back.
15	GFS	I	A terminal which indicates that the frame sink of CXD1167 is locked. "H" indicates normal operation, and "L" error.
16	FOK	I	A terminal which receives signal from the focus OK comparator output terminal of CXA1082. "H" indicates FOCUS OK, and "L" FOCUS NG.
17	Vss	–	GND terminal.
18	A MUTE	O	A terminal which controls the analog mute circuit. In the PLAYBACK or manual search mode, the terminal is turned to "L" to reset muting.
19	CD ROM	O	A terminal which outputs Audio/ROM mode controller of CXD1167.
20	D MUTE	O	A terminal which controls digital muting of CXD1167. When ATTM of Internal Register "A" in CXD1167 is "0", the terminal is turned to "L" and audio signal is outputted normally. When the terminal is turned to "H", no sound is produced with –∞dB.
21	CLK	O	A terminal which outputs the serial data transfer clock.
22	XLT	O	A terminal which outputs latch.
23	DATA	O	A terminal which outputs serial data to control the CD servo IC "CXA1082" and the signal processing IC "CXD1167".
24	SQCK	O	A terminal which outputs SUB-Q readout clock of CD IC.
25	XRST	O	A terminal which resets CXA1082 and CXD1167.
26 ~ 31	LED 1 ~ LED 6	O	A terminal which controls LEDs. LED-1 through LED-6 correspond to Disc Numbers in the magazine. In normal operation, the terminal indicates presence of the disc. If temperature error, mechanical error, memory error or forced eject error occurs, the terminal indicates the applicable error.
32	Vss	–	GND terminal.
33	DOOR SW	I	A terminal which receives door switch signal. When the door is opened, the terminal is turned to "H". When the door is closed, the terminal is turned to "L".

<table>
<tr><th>Pin No.</th><th>Symbol</th><th>I/O</th><th>Function</th></tr>
<tr><td>34</td><td>EJE SEL</td><td>I</td><td>A terminal which selects ACC OFF EJECT DISABLE signal.
When the terminal is turned to "H", ACC is turned OFF and EJECT key is turned ON to enable EJECT operation. When it is turned to "L", EJECT is disabled.</td></tr>
<tr><td>35
36</td><td>U/D M CW
U/D M CCW</td><td>O
O</td><td>A terminal which controls magazine's eject and disc's up/down operation (clamp).
<table>
<tr><th></th><th>Clamp UP</th><th>Clamp DOWN</th><th>Magazine EJECT</th><th colspan="2">Braking</th></tr>
<tr><td>U/D M CW</td><td>"H"</td><td>"L"</td><td>"L"</td><td>"H"</td><td>"L"</td></tr>
<tr><td>U/D M CCW</td><td>"L"</td><td>"H"</td><td>"H"</td><td>"H"</td><td>"L"</td></tr>
</table></td></tr>
<tr><td>37
38</td><td>PL M CCW
PL M CW</td><td>O
O</td><td>A terminal which controls horizontal drive of the disc to check, load and store the disc.
<table>
<tr><th></th><th>Disc loading</th><th>Disc storage</th><th colspan="2">Braking</th></tr>
<tr><td>PL M CCW</td><td>"L"</td><td>"H"</td><td>"H"</td><td>"L"</td></tr>
<tr><td>PL M CW</td><td>"H"</td><td>"L"</td><td>"H"</td><td>"L"</td></tr>
</table></td></tr>
<tr><td>39</td><td>+B REM</td><td>I</td><td>A terminal which inputs +B-REMOTE terminal.
When 6-pin LED SEL terminal is turned to "L", this terminal controls six LEDs and inserting window illumination. The lamp lights when the 6-pin LED SEL terminal is turned to "L", and it turns out when the terminal is turned to "H".</td></tr>
<tr><td>40</td><td>LED SEL</td><td>I</td><td>A terminal which inputs LED indication.
When the terminal is turned to "H", six LEDs and the inserting window illumination is controlled by a command on C-BUS. When it is turned to "L", the LEDs and illumination is controlled by 7-pin +B REM terminal.</td></tr>
<tr><td>41</td><td>P/ESW</td><td>I</td><td>A terminal which receives signal of a switch which detects approximate loading, chucking and eject positions in the up/down direction of the mechanism.</td></tr>
<tr><td>42</td><td>LED CONT</td><td>O</td><td>A terminal which controls LED ON/OFF operation of Disc No. PTr and Disc detection PTr.
The terminal is turned to "H" when the mechanism runs.</td></tr>
<tr><td>43</td><td>RESET</td><td>I</td><td>A terminal which resets the IC.</td></tr>
<tr><td>44</td><td>SCOR</td><td>I</td><td>A terminal which receives signal from the sub-code sink SO/SI output terminal of CXD1167. In the PLAY mode, the terminal is turned to "H" every 13.3mS to read sub-Q data.</td></tr>
<tr><td>45</td><td>ACC CONT</td><td>I</td><td>A terminal which inputs NMI (Non-Maskable Interrupt).
With input of the "H" pulse longer than 10μS, the terminal resets the STOP mode of clock stop and CPU shifts to the operation mode after elapse of clock oscillation stability period.</td></tr>
<tr><td>46</td><td>Eject detection</td><td>I</td><td>A terminal which receives signal from the EJECT key. When the terminal is turned to "H", the magazine is ejected.</td></tr>
<tr><td>47</td><td>Magazine SW</td><td>I</td><td>A terminal which receives signal from a switch detecting insertion of the magazine. When the terminal is turned to "L", the magazine is inserted.</td></tr>
<tr><td>48</td><td>Vdd</td><td></td><td>Power supply terminal (+5V ±10%).</td></tr>
<tr><td>49
50</td><td>X2
X1</td><td>O
I</td><td>4MHz terminal which is connected to the ceramic resonator to oscillate system clock.</td></tr>
<tr><td>51</td><td>Vss</td><td>–</td><td>GND terminal.</td></tr>
<tr><td>52</td><td>N.C</td><td>–</td><td>No connection.</td></tr>
<tr><td>53</td><td>B/U detection</td><td></td><td>A terminal which receives BACK-UP detection signal.
When BACK-UP is turned OFF to turn the terminal to "L", CPU is put in the STOP mode.</td></tr>
<tr><td>54</td><td>Vss</td><td>–</td><td>GND terminal.</td></tr>
<tr><td>55</td><td>DISC NO. PTr</td><td>I</td><td>A terminal which receives signal from DISC NO. detection photosensor.
The terminal determines accurate position on PTr by detecting approx. position in the up/down direction of the mechanism with P/E switch.
Accurate position is determined when the terminal is turned to "L".
(Used as A/D port)</td></tr>
<tr><td>56</td><td>Disc detection PTr</td><td>I</td><td>A terminal which receives signal of the DISC presence detection photosensor.
The terminal determines status (presence) of the disc in the magazine, perfect ejection of the disc and its storage in the magazine.
"H": Disc detected (being loaded or unloaded)
(Used as A/D port)</td></tr>
<tr><td>57</td><td>Disc load PTr</td><td>I</td><td>A terminal which receives signal of the DISC loading.</td></tr>
<tr><td>58</td><td>LoadEndSW</td><td>I</td><td>A terminal which receives signal of a switch detecting that the disc has been ejected entirely from the magazine. When the terminal is turned to "H", the disc has been ejected.</td></tr>
<tr><td>59</td><td>D L SW</td><td>I</td><td>A terminal which receives signal of a switch detecting whether the mechanism can move up and down. When the terminal is turned to "L", the mechanism can move up and down.</td></tr>
<tr><td>60</td><td>Temperature sensor</td><td>I</td><td>A terminal which judges high temperature when voltage applied to this port becomes lower than 2.5V. When the voltage is higher than 2.7V, temperature NG is reset to shift to the operation mode. (Used as A/D port)</td></tr>
<tr><td>61</td><td>SUBQ</td><td>I</td><td>A terminal which receives sub-Q data from CXD1167.</td></tr>
<tr><td>62</td><td>SENSE</td><td>I</td><td>A terminal which controls CD by receiving FZC, AS, TZC, SSTOP and BUSY, etc. from CXA1082 and CXD1167.</td></tr>
<tr><td>63</td><td>Vdd</td><td>–</td><td>Power supply terminal (+5V ±10%).</td></tr>
<tr><td>64</td><td>Vss</td><td>–</td><td>GND terminal.</td></tr>
</table>

■PARTS LIST:

◎Electrical section

MAIN PWB

REF NO.	PART NO.	DESCRIPTION	QTY
D201,203,204 309,310,501 502	001-0330-00 001-0352-00	DIODE 1SS119 1SS176	7
D102	001-0377-30 001-0400-30	DIODE MA4051H HZS5.1EB3	1
D601	001-0377-48 001-0400-48	DIODE MA4091H HZS9.1JB3	1
D101	001-0377-49 001-0400-49	DIODE MA4100L HZS10JB1	1
D401-403	001-0423-24 001-0425-24	DIODE MA4091 HZS9.1J	3
D303-308	001-0483-03	LED LT8S257	6
D302	001-0563-00	LED GL380	1
D202,301	001-0567-33 001-0503-33	DIODE RD5.6JSN3 HZS6 B2L	2
S201	013-3741-12	SWITCH *EJECT	1
C104	042-0417-00	ELECTRO-C 10V 220 μF	1
C306	042-0452-00	ELECTRO-C 6.3V 330 μF	1
C603,604	042-0501-00	ELECTRO-C 6.3V 100 μF	2
C602	042-0501-01	ELECTRO-C 10V 100 μF	1
C701,704,801 804	042-0501-02	ELECTRO-C 16V 33 μF	4
IC401	051-0160-06	IC SN74LS07NS	1
IC501	051-0859-36	IC MC74HCU04F	1
IC201	051-0869-55	IC NJM2103M	1
IC701,702	051-1292-00	IC NJM4565M-D	2
IC901	051-1765-00	IC AN6608	1
IC301	051-1779-00	IC μPD78002CW-012	1
X301	060-0146-50	CERA-RESONATOR *CST4.00M	1
Q202,501	100-1561-50	TRANSISTOR 2SA1561	2
Q101,104	101-1240-50	TRANSISTOR 2SB1240	2
Q305,701,801	102-4038-50	TRANSISTOR 2SC4038	3
Q702,802	103-1450-50	TRANSISTOR 2SD1450	2
Q103,106	103-1683-50	TRANSISTOR 2SD1683	2
Q201,303,304 601	103-1858-50	TRANSISTOR 2SD1858	4
Q203,301,602 604	125-0012-92	TRANSISTOR DTA124	4
Q102,105,204 302,502,603	125-2016-91	TRANSISTOR DTC114	6
R102	114-4711-11	METAL FILM-R 1W 470Ω	1
R901	114-5681-11	METAL FILM-R 1W 0.56Ω	1
C703,803	160-2212-05	CERAMIC-C 220pF	2
C503	172-1041-11	POLYESTER-C 0.1 μF	1
C101,708,808	173-1021-11	POLYESTER-C 1000pF	3
C702,802	173-1521-11	POLYESTER-C 1500pF	2
C202,301-305 308	178-1022-05	CHIP-C 1000pF	7
C307,401,502 902,904	178-1042-05	CHIP-C 0.1 μF	5
C903	178-2232-05	CHIP-C 0.022 μF	1
C201,705,805	183-1053-61	ELECTRO-C 50V 1 μF	3
C601	183-1063-31	ELECTRO-C 16V 10 μF	1
C103,901	183-1073-21	ELECTRO-C 10V 100 μF	2
C309,501	183-4763-11	ELECTRO-C 6.3V 47 μF	2
C102	184-4773-31	ELECTRO-C 16V 470 μF	1

MOTOR DRIVE PWB

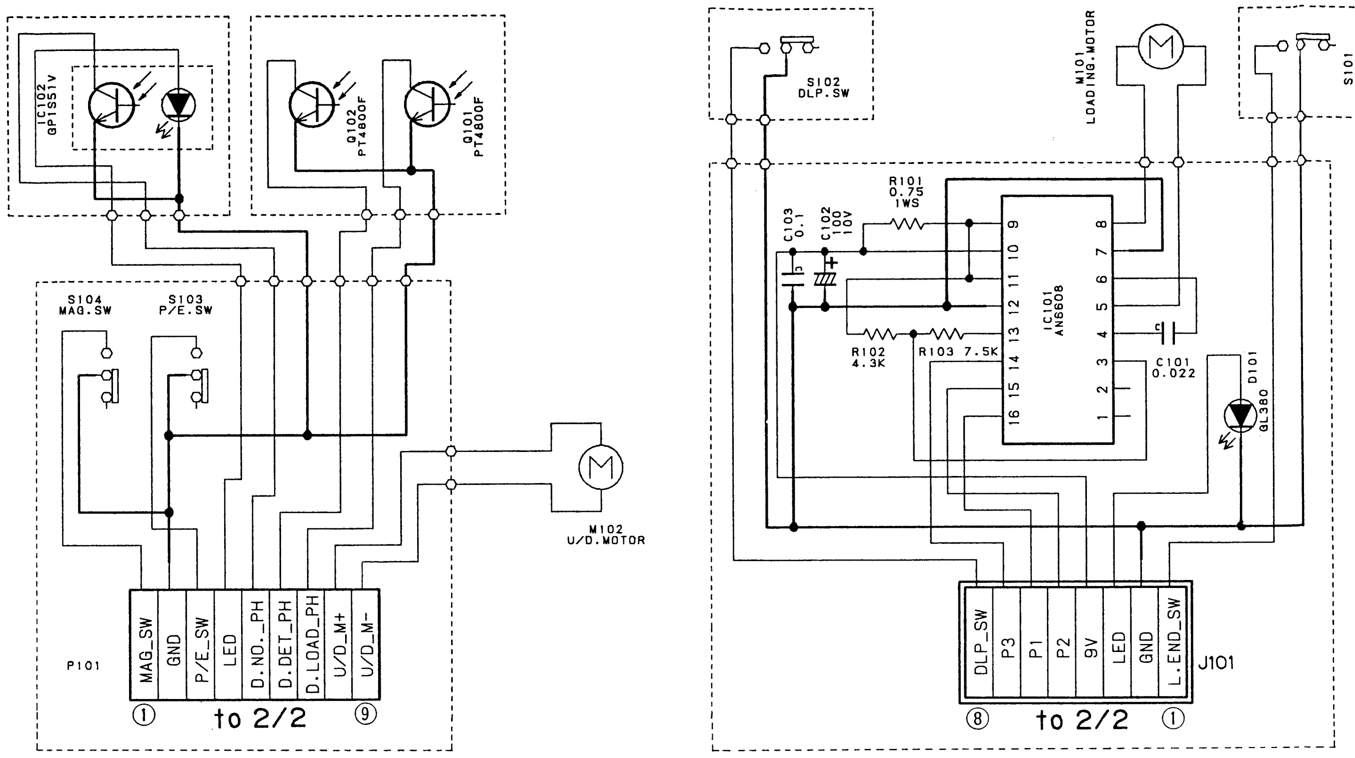
REF NO.	PART NO.	DESCRIPTION	QTY
D101	001-0563-00	LED GL380	1
S101-104	013-3808-11	SWITCH	4
IC102	051-1743-00	IC GP1S51	1
IC101	051-1765-00	IC AN6608	1
Q101,102	060-0252-00	PHOTO TRANSISTOR*PT4800F	2
J101	074-0922-08	OUTLET SOCKET *8P	1
R101	114-7581-11	METAL FILM-R 1W 0.75Ω	1
C101	171-2233-06	CERAMIC-C 0.022 μF	1
C103	172-1041-11	POLYESTER-C 0.1 μF	1
C102	183-1073-21	ELECTRO-C 10V 100 μF	1

CD FLOAT PWB

REF NO.	PART NO.	DESCRIPTION	QTY
D1-3	001-0367-00	DIODE 1SS226	3
L1	010-2155-03	COIL	1
VR5	012-4997-02	VARIABLE-R *1k	1
VR1-4	012-4997-07	VARIABLE-R *22k	4
C49,53-56 59-61,63-66 68-71	032-0092-03	CHIP-R 15kΩ(1%)	16
C50,52,57,58 62,67	032-0092-04	CHIP-R 30kΩ(1%)	6
R24,26	032-0092-05	CHIP-R 100kΩ(1%)	2
C29,30,33	042-0397-00	CHIP-C 16V 1 μF TAN	3
C19,22	042-0397-03	CHIP-C 25V 0.47 μF TAN	2
C1,44	042-0397-05	CHIP-C 6.3V 3.3 μF TAN	2
C37	042-0398-01	CHIP-C 10V 4.7 μF TAN	1
C3,5,25,47	042-0416-01	CHIP-C 6.3V 10 μF TAN	4
C27,60	042-0449-00	CHIP-C 4V 22 μF TAN	2
IC8,9	051-0556-01	IC NJM2058M	2
IC1	051-1237-10	IC CXA1081Q	1
IC2	051-1238-00	IC CXA1082BQ	1
IC3	051-1377-01	IC CXD1167Q	1
IC5	051-1497-00	IC TA2009F	1
IC6	051-1738-35 051-1738-05	IC SC7S08F TC7S08F	1
IC4	051-1766-05	IC TC9267F	1
X1	061-1087-58	CRYSTAL *16MHz	1
Q1,6,8,10,12 14,16,18,20	101-1188-50	TRANSISTOR 2SB1188	9
Q2,3	102-2712-00 103-0601-00	TRANSISTOR 2SC2712 2SD601	2
Q5,7,9,11,13 15,17,19	103-1766-50	TRANSISTOR 2SD1766	8
Q4	125-2004-02 125-2005-01	TRANSISTOR RN1402 UN2111	1
C2,24	163-1073-10	CHIP ELEC-C 6.3V 100 μF	2
C58	163-4763-30	CHIP ELEC-C 16V 47 μF	1
C65	176-1011-00	CHIP-C 100pF	1
C61	176-1201-00	CHIP-C 12pF	1
C6	176-1801-00	CHIP-C 18pF	1
C62	176-2096-00	CHIP-C 2pF	1
C15,16	176-2201-00	CHIP-C 22pF	2
C40,49-56	176-4702-00	CHIP-C 47pF	9
C17,20,34,63 66-68	178-1022-05	CHIP-C 1000pF	7
C4,7,8,21,26 42,43,46,48 57	178-1032-05	CHIP-C 0.01 μF	10
C11-14,23,35 36,38,41,45 59,64	178-1042-05	CHIP-C 0.1 μF	12
C31	178-2222-05	CHIP-C 2200pF	1
C9,10,18,39	178-3332-05	CHIP-C 0.033 μF	4
C28	178-4722-05	CHIP-C 4700pF	1
C32	178-4732-05	CHIP-C 0.047 μF	1

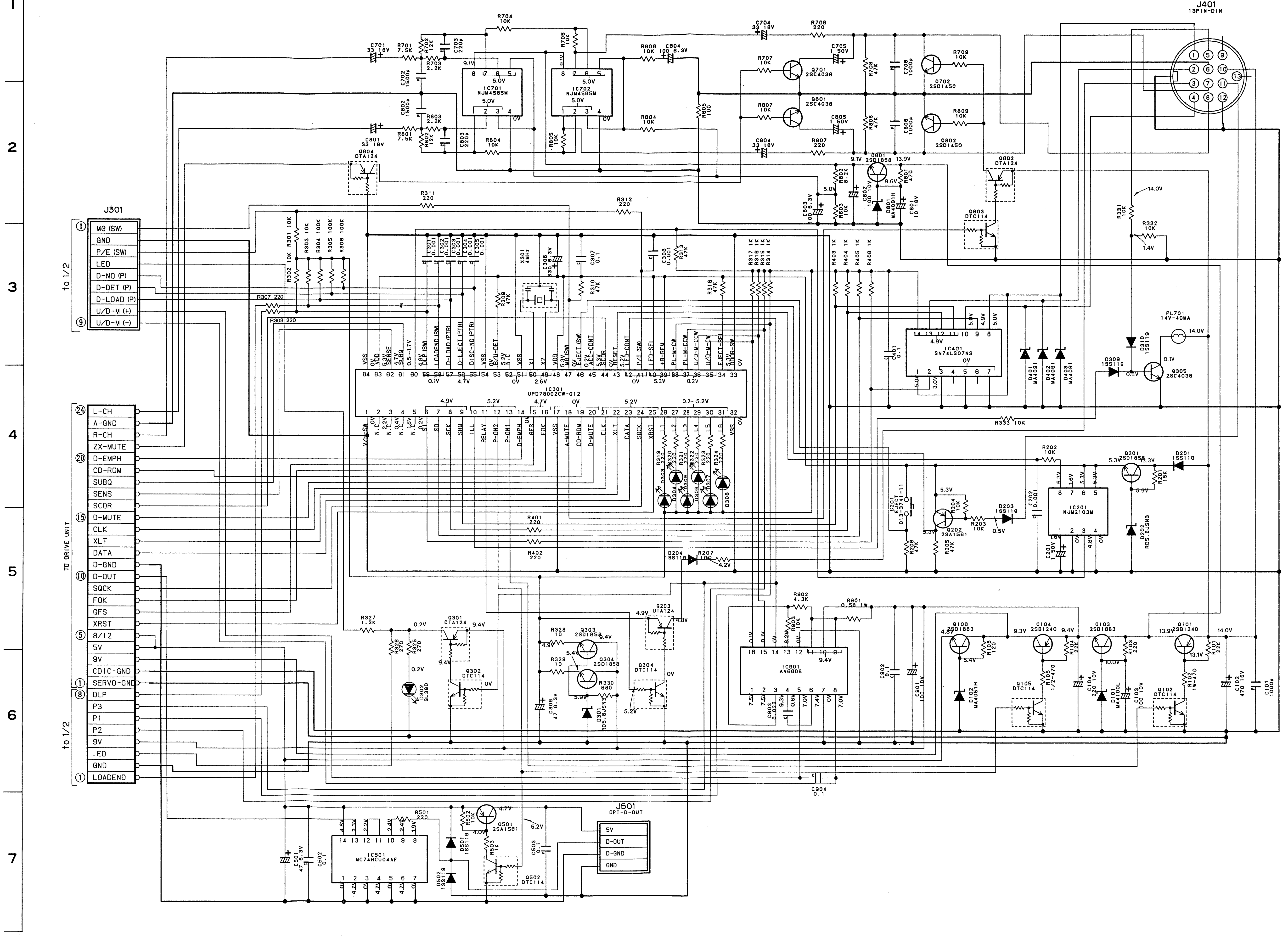
■CIRCUIT DIAGRAM: 1/2

◎Main section



■CIRCUIT DIAGRAM: 2/2

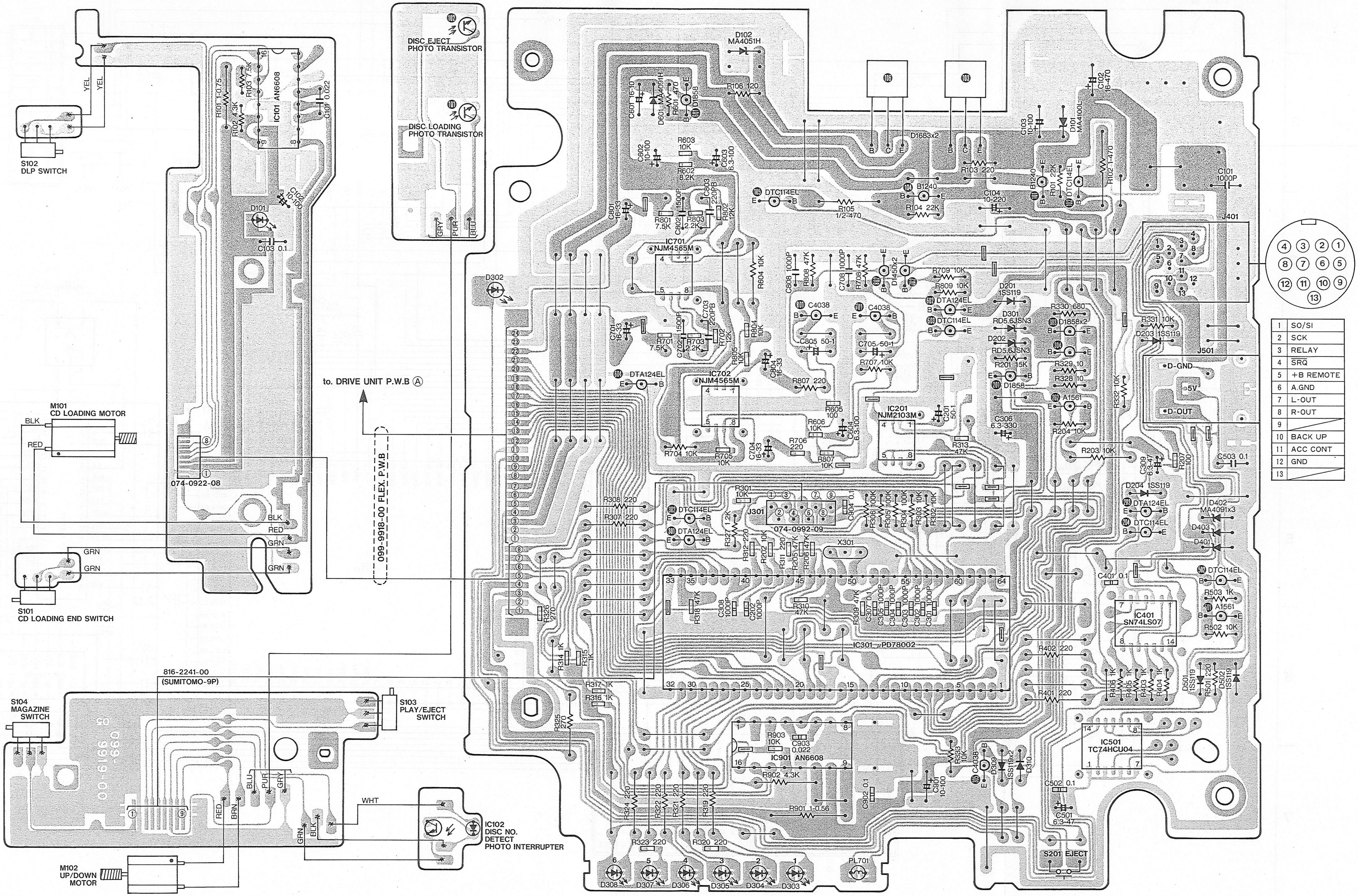
◎Main section


J301
MG (SW)
GND
P/E (SW)
LED
D-NO (P)
D-DET (P)
D-LOAD (P)
U/D-M (+)
U/D-M (-)
to 1/2
TO DRIVE UNIT
L-CH
A-GND
R-CH
ZX-MUTE
D-EMPH
CD-ROM
SUBQ
SENS
SCOR
D-MUTE
CLK
XLT
DATA
D-GND
D-OUT
SQCK
FOK
GFS
XRST
8/12
5V
9V
CDIC-GND
SERVO-GND
DLP
P3
P1
P2
9V
LED
GND
LOADEND
IC701 NJM4565M
IC702 NJM4565M
IC301 UPD78002CW-012
IC401 SN74LS07NS
IC201 NJM2103M
IC901 AN6606
IC501 MC74HCU04AF
J401 13PIN-DIN
J501 OPT-D-OUT
5V
D-OUT
D-GND
GND
X301 4MHz
PL701 14V-40MA
Q701 2SC4038
Q801 2SC4038
Q702 2SD1450
Q802 2SD1450
Q601 2SD1858
Q602 DTA124
Q603 DTC114
Q604 DTA124
Q301 DTA124
Q302 DTC114
Q303 2SD1858
Q304 2SD1858
Q203 DTA124
Q204 DTC114
Q201 2SD1858
Q202 2SA1581
Q305 2SC4038
Q501 2SA1581
Q502 DTC114
Q101 2SB1240
Q102 DTC114
Q103 2SD1663
Q104 2SB1240
Q105 DTC114
Q106 2SD1663
D601 MA4091H
D401 MA4081
D402 MA4081
D403 MA4081
D309 1SS119
D310 1SS119
D201 1SS119
D202 RD5.6JSN3
D203 1SS119
D204 1SS119
D301 RD5.6JSN3
D302 GL380
D501 1SS119
D502 1SS119
D101 MA4100L
D102 MA4051H
S201 ESE-13741-11
C904 0.1
R333 10K
14.0V

1	SO/SI
2	SCK
3	RELAY
4	$\overline{\text{SRQ}}$
5	+B_REMOTE
6	A_GND
7	L-OUT
8	R-OUT
9	N.C
10	B/U
11	ACC_CONT
12	GND
13	N.C
ケース	GND

■PRINTED WIRING BOARD:

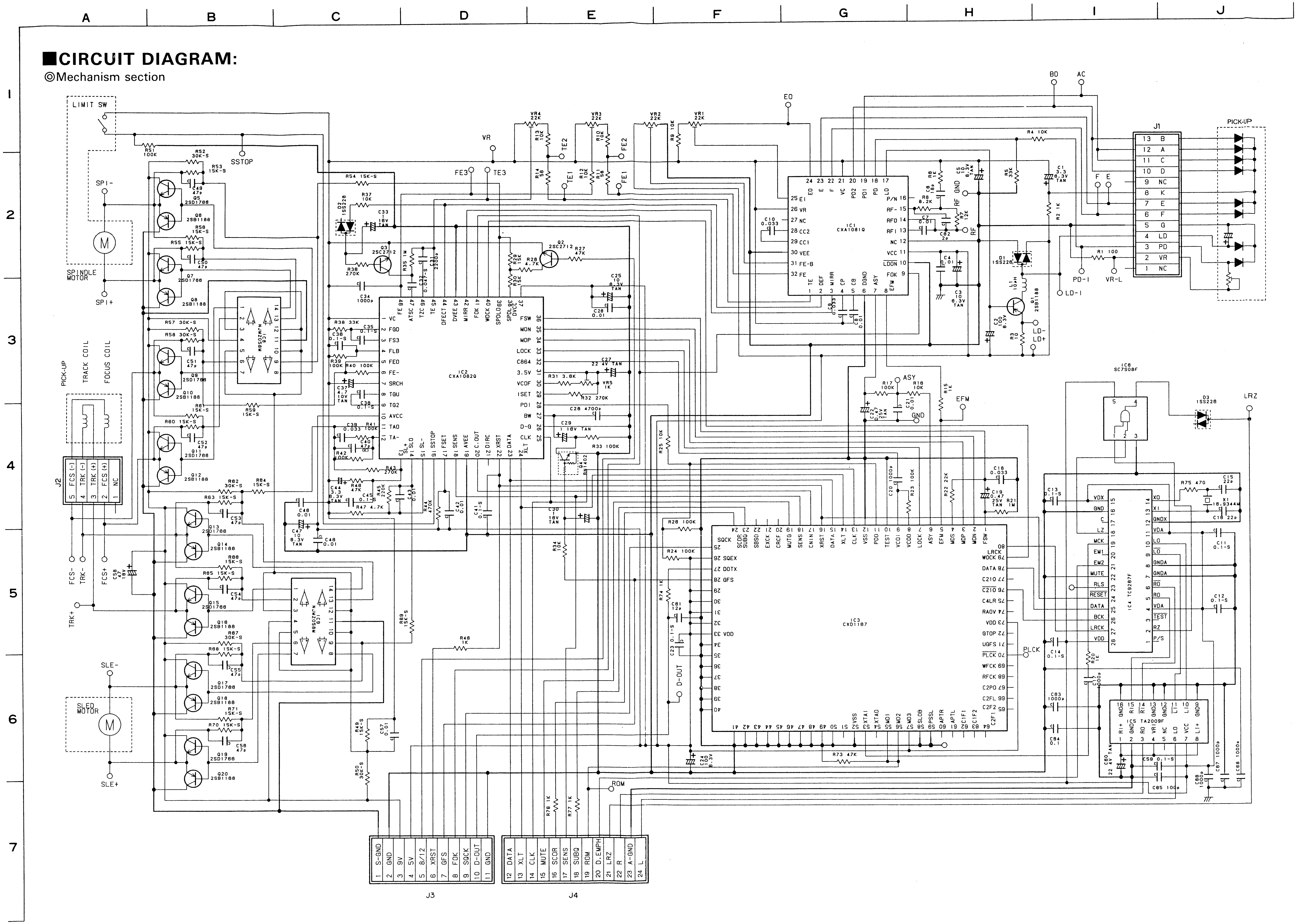
◎Main section


S102
DLP SWITCH
YEL
YEL
R101 1-0.75
R102 4.3K
R103 7.5K
IC101 AN6608
C101 0.022
C102 10-100
D101
C103 0.1
DISC EJECT PHOTO TRANSISTOR
DISC LOADING PHOTO TRANSISTOR
GRY
PUR
BLU
M101
CD LOADING MOTOR
BLK
RED
074-0922-08
GRN
S101
CD LOADING END SWITCH
to. DRIVE UNIT P.W.B Ⓐ
099-9918-00 FLEX. P.W.B
816-2241-00
(SUMITOMO-9P)
S104
MAGAZINE
SWITCH
S103
PLAY/EJECT
SWITCH
WHT
BRN
IC102
DISC NO.
DETECT
PHOTO INTERRUPTER
M102
UP/DOWN
MOTOR
D102
MA4051H
R106 120
D1683x2
R103 220
C103 10-100
D101 MA4100L
C102 16-470
R102 1-470
C101 1000P
B1240
R104 22K
C104 10-220
R105 1/2-470
DTC114EL
R101 22K
J401
C601 16-10
D601 MA4051H
R601 470
D1858
R603 10K
C602 10-100
R602 8.2K
C603 6.3-100
C801 16-33
R801 7.5K
C802 1500P
R803 2.2K
C803 220PB
R802 12K
IC701 NJM4565M
R604 10K
C808 1000P
R808 47K
C708 1000P
R708 47K
D1450x2
R709 10K
R809 10K
D201 1SS119
DTA124EL
DTC114EL
C4038
C805 50-1
C705 50-1
R707 10K
C701 16-33
R701 7.5K
C702 1500P
R703 2.2K
C703 220PB
R702 12K
R804 10K
R805 10K
C804 16-33
IC702 NJM4565M
R807 220
R605 100
R606 10K
C604 6.3-100
R704 10K
R705 10K
C704 16-33
R706 220
R807 10K
IC201 NJM2103M
C201 50-1
D302
D301 RD5.6JSN3
D202 RD5.6JSN3
R201 15K
D1858
A1561
C306 6.3-330
R313 47K
R330 680
D1858x2
R329 10
R328 10
R204 10K
R203 10K
R331 10K
D203 1SS119
J501
D-GND
5V
D-OUT
R332 10K
C309 6.3-47
R207 100
C503 0.1
D204 1SS119
D402 MA4091x3
D403
D401
R308 220
R307 220
R301 10K
J301
074-0992-09
C304 0.1
R306 100K
R305 100K
R304 100K
R303 10K
R302 10K
R327 12K
R312 220
R202 10K
R311 220
R205 47K
R206 47K
X301
C401 0.1
DTC114EL
R503 1K
R502 10K
IC401 SN74LS07
R326 270
R318 47K
C308 1000P
C302 1000P
R310 47K
R309 47K
C307 0.1
C305 1000P
C304 1000P
C303 1000P
C302 1000P
C301 1000P
IC301 μPD78002
R314 1K
R315 1K
R402 220
R401 220
R406 1K
R405 1K
R403 1K
R404 1K
D501 1SS119
R501 220
D502 1SS119
R317 1K
R316 1K
R325 270
R903 10K
C903 0.022
IC901 AN6608
R902 4.3K
R901 1-0.56
C902 0.1
C301 10-100
R333 10K
C4038
D309 1SS119x2
D310
IC501 TC74HCU04
C502 0.1
C501 6.3-47
R324 220
R322 220
R321 220
R319 220
R323 220
R320 220
PL701
S201 EJECT
D308
D307
D306
D305
D304
D303

1	SO/SI
2	SCK
3	RELAY
4	SRQ
5	+B REMOTE
6	A.GND
7	L-OUT
8	R-OUT
9	
10	BACK UP
11	ACC CONT
12	GND
13	

■CIRCUIT DIAGRAM:

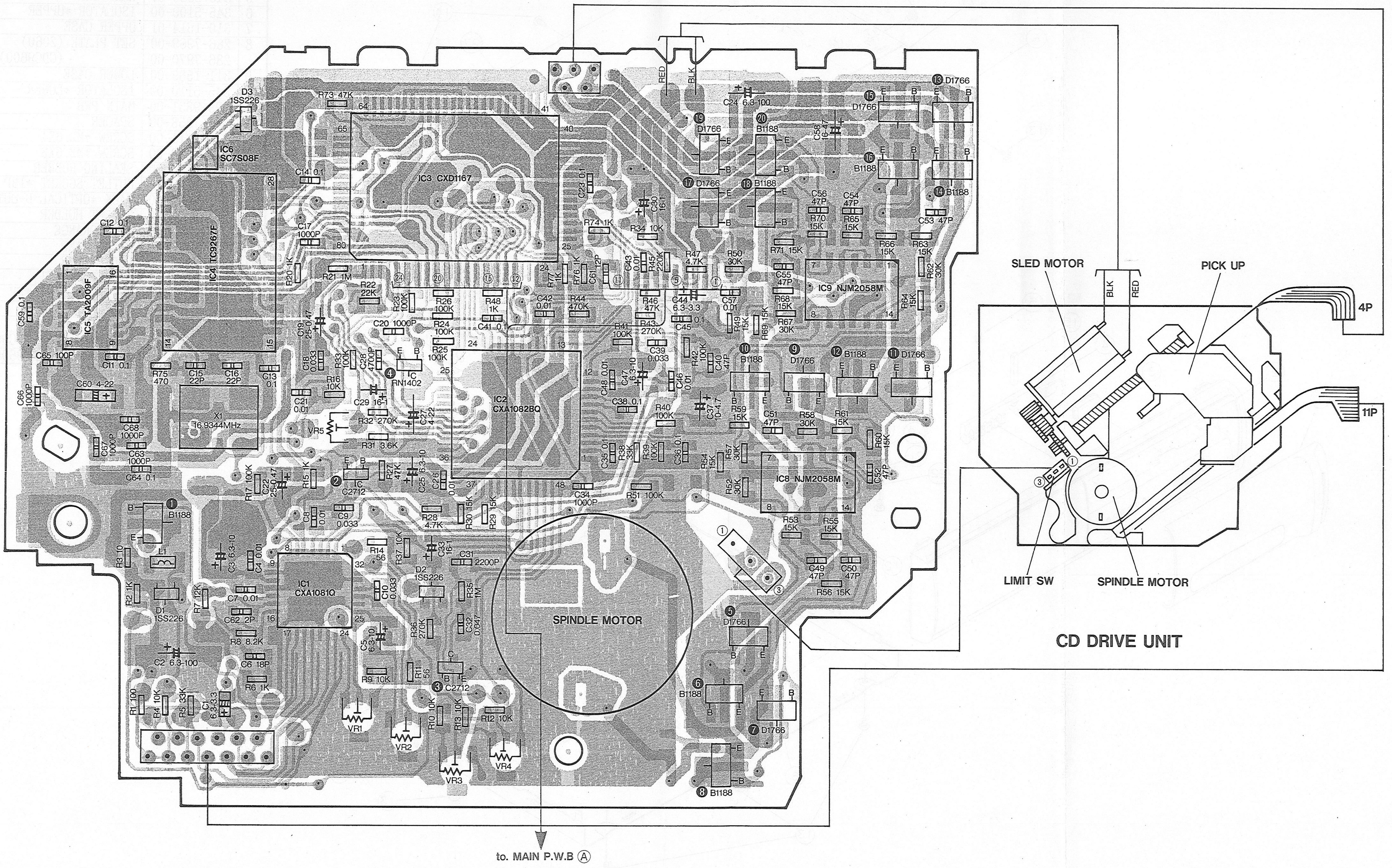
◎Mechanism section



A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
7
LIMIT SW
SSTOP
SPI-
SPI+
SPINDLE MOTOR
PICK-UP
TRACK COIL
FOCUS COIL
J2
FCS (-)
TRK (-)
TRK (+)
FCS (+)
NC
FCS-
TRK-
FCS+
TRK+
SLE-
SLE+
SLED MOTOR
IC8 NJM2058M
IC9 NJM2058M
Q5 2SD1788
Q6 2SB1188
Q7 2SD1788
Q8 2SB1188
Q9 2SD1788
Q10 2SB1188
Q11 2SD1788
Q12 2SB1188
Q13 2SD1788
Q14 2SB1188
Q15 2SD1788
Q16 2SB1188
Q17 2SD1788
Q18 2SB1188
Q19 2SD1788
Q20 2SB1188
D2 1SS228
Q3 2SC2712
Q2 2SC2712
IC2 CXA1082Q
VR
FE3
TE3
TE2
TE1
FE2
FE1
VR4 22K
VR3 22K
VR2 22K
VR1 22K
EO
IC1 CXA1081Q
BD
AC
J1
PICK-UP
13 B
12 A
11 C
10 D
9 NC
8 K
7 E
6 F
5 G
4 LD
3 PD
2 VR
1 NC
F
E
RF
GND
D1 1SS228
Q1 2SB1188
L1 10µH
PD-I
VR-L
LD-I
LD-
LD+
ASY
EFM
GND
IC6 SC7S08F
D3 1SS228
LRZ
IC3 CXD1167
IC4 TC9287F
IC5 TA2009F
X1 16.9344M
PLCK
D-OUT
ROM
J3
1 S-GND
2 GND
3 9V
4 5V
5 8/12
6 XRST
7 GFS
8 FOK
9 SQCK
10 D-OUT
11 GND
J4
12 DATA
13 XLT
14 CLK
15 MUTE
16 SCOR
17 SENS
18 SUBQ
19 ROM
20 D.EMPH
21 LRZ
22 R
23 A-GND
24 L

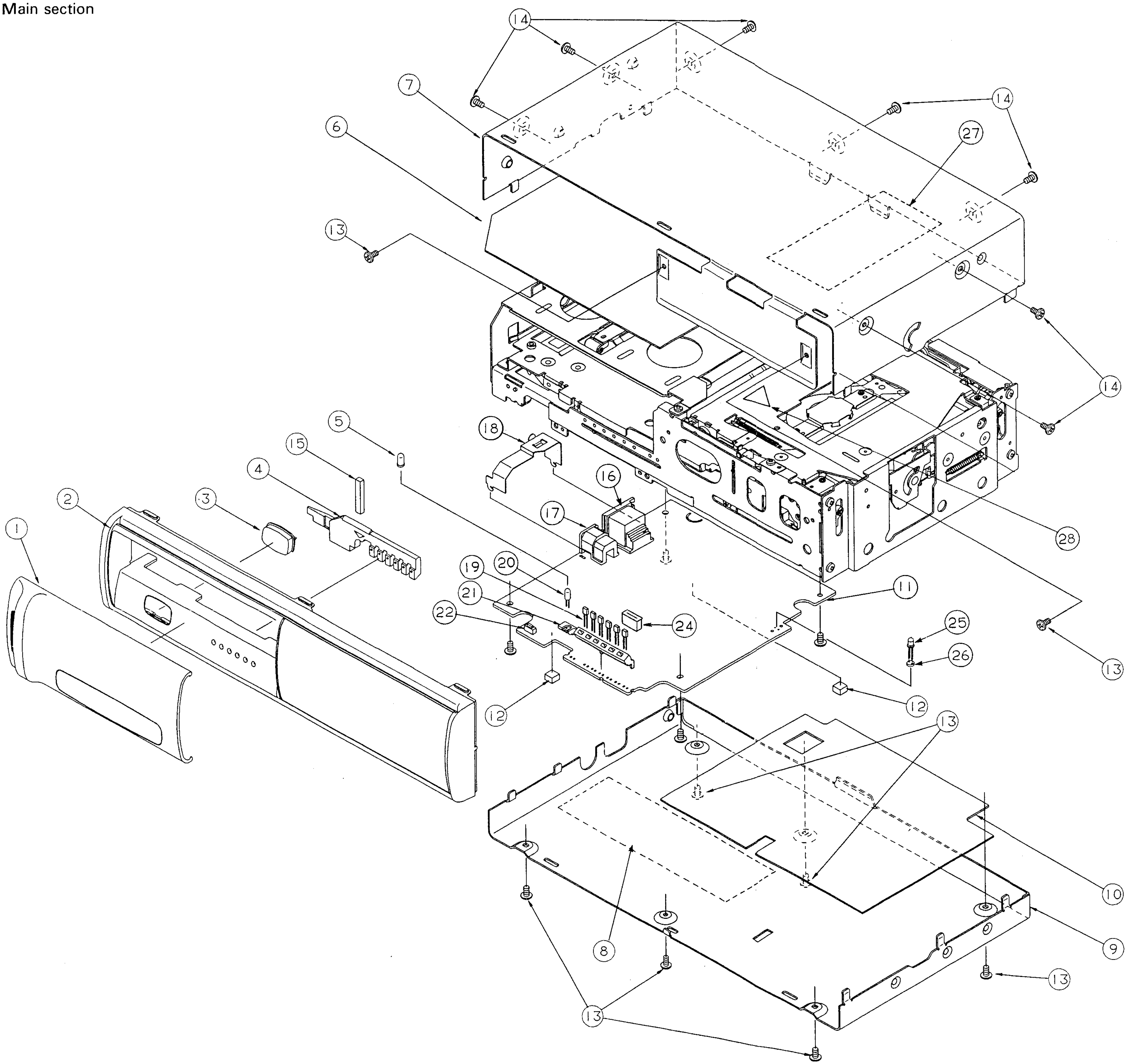
■PRINTED WIRING BOARD:

◎Mechanism section


IC1 CXA1081Q
IC2 CXA1082BQ
IC3 CXD1167
IC4 TC9267F
IC5 TA2009F
IC6 SC7S08F
IC8 NJM2058M
IC9 NJM2058M
X1 16.9344MHz
RN1402
D1 1SS226
D2 1SS226
D3 1SS226
VR1
VR2
VR3
VR4
VR5
L1
RED
BLK
SPINDLE MOTOR
SLED MOTOR
PICK UP
LIMIT SW
4P
11P
CD DRIVE UNIT
to. MAIN P.W.B Ⓐ

■EXPLODED VIEW・PARTS LIST:

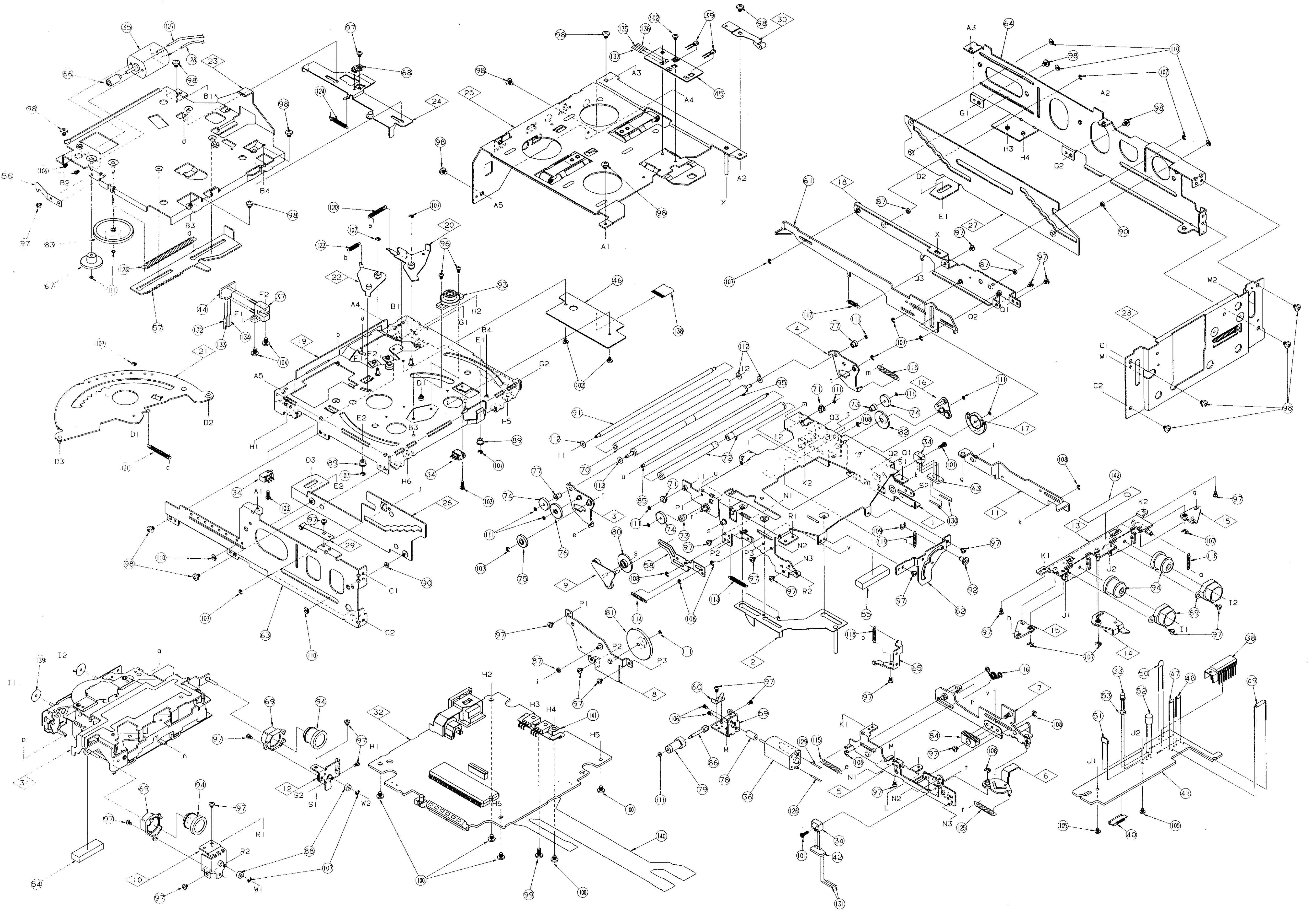
◎Main section

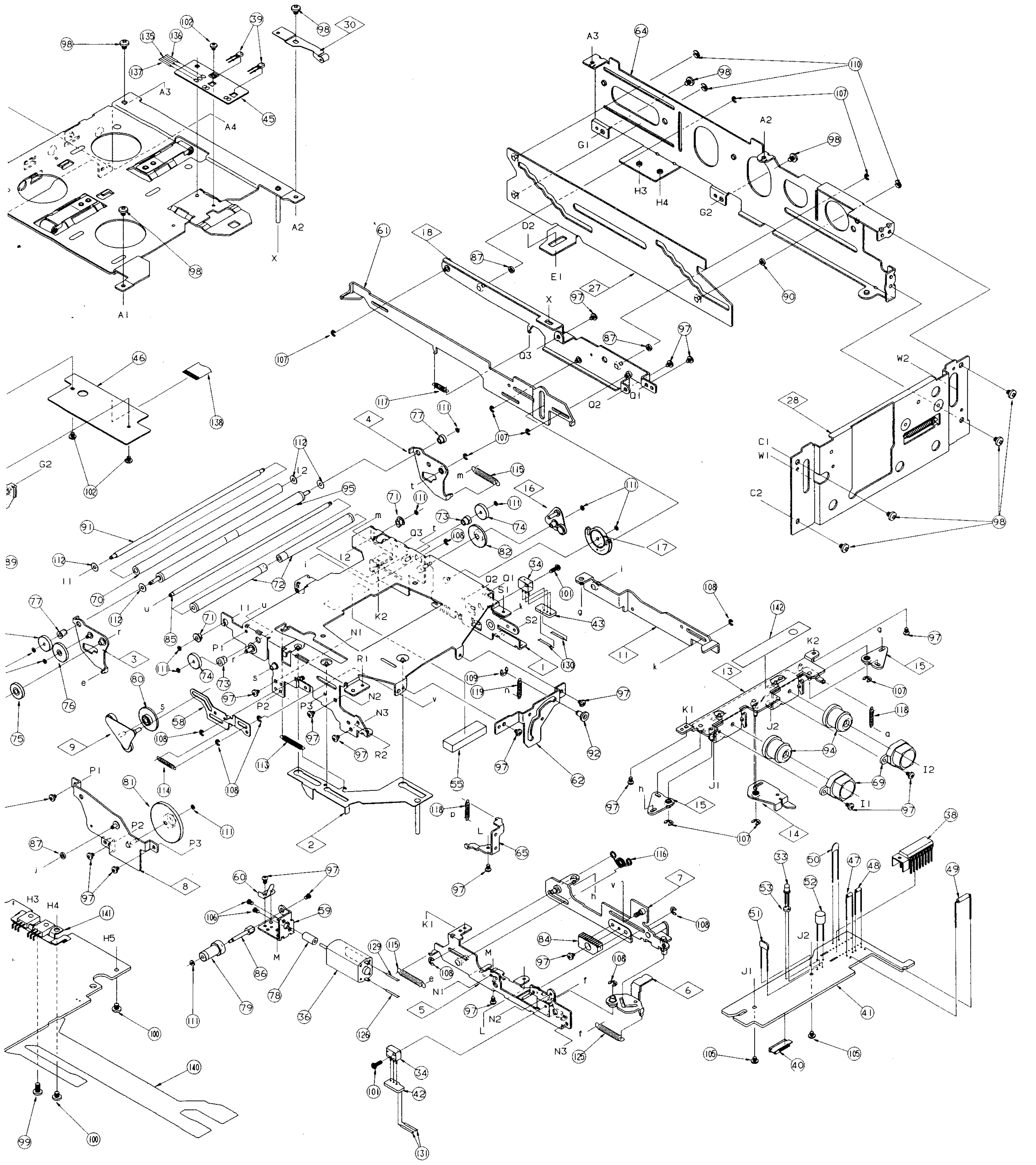


NO	PART NO	DESCRIPTION	QTY
1	320-0489-01 320-0489-02	SLIDING DOOR (2060) (CDC9600)	1
2	370-5412-01	ESCUTCHEON	1
3	382-3212-01	BUTTON *EJECT	1
4	335-4374-00	ILLUMINATION PLATE	1
5	345-2830-07	LAMP CAP	1
6	345-5109-00	ISOLATOR *UPPER	1
7	310-1514-01	UPPER CASE	1
8	286-7969-00 286-7970-00	SET PLATE (2060) (CDC9600)	1
9	311-1569-00	LOWER CASE	1
10	345-5110-00	ISOLATOR *LOWER	1
11	099-9831-00	MAIN PWB	1
12	345-7358-00	SPACER	2
13	716-1611-00	SCREW *M2.6X4	6
14	716-1612-00	SCREW *M2.6X3	9
15	345-5158-00	SEALING RUBBER	1
16	074-0927-11	OUTLET SOCKET *13P DIN	1
17	075-0305-00	JACK *OPTICAL D-OUT	1
18	331-0034-00	OUTLET HOLDER	1
19	001-0483-03	LED *ORANGE	6
20	017-0418-00	PILOT LAMP	1
21	335-4373-00	LED HOLDER	1
22	013-3741-12	SWITCH *EJECT	1
24	074-0992-09	OUTLET SOCKET *9P	1
25	001-0563-00	LED	1
26	345-4205-00	SPACER	1
27	285-1340-00	LABEL*CAUTION(CDC9600)	1
28	285-1426-00	LABEL*LASER(CDC9600)	1

■EXPLODED VIEW • PARTS LIST:

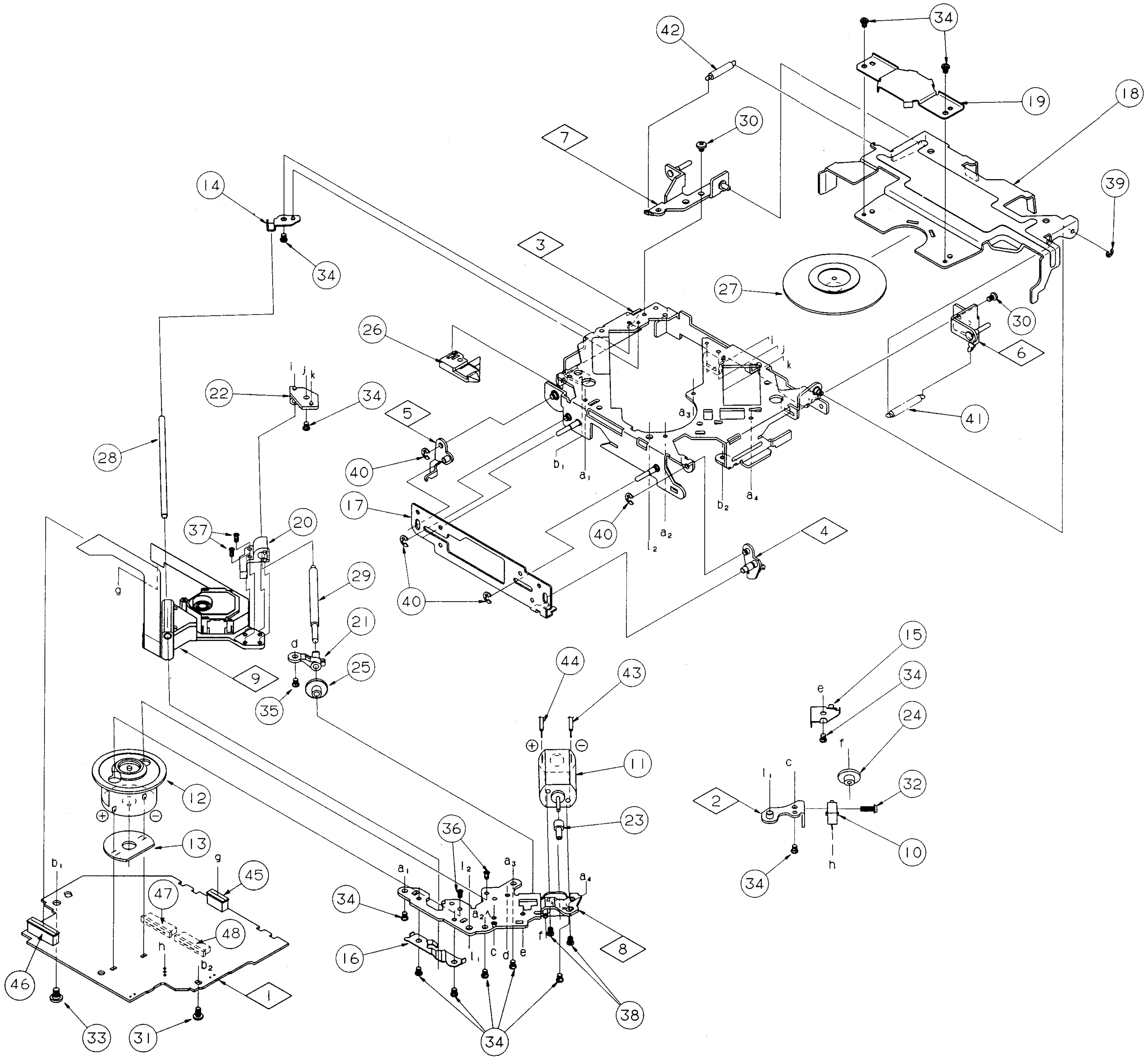
◎CD change module mechanism section


35
127
128
66
98
23
B1
97
68
124
24
56
106
B2
B4
B3
83
67
123
111
57
97
98
25
135
136
102
39
30
137
A3
A4
45
A2
X
A5
A1
A3
64
110
107
A2
G1
H3
H4
G2
D2
E1
90
61
18
87
27
Q2
Q1
D3
W2
28
C1
W1
C2
120
107
20
122
96
22
93
H2
G1
B1
E1
A4
B4
G2
F2
37
F1
44
132
133
134
104
19
A5
21
D1
D2
D3
121
E2
H5
H1
H6
89
34
103
46
138
112
95
91
70
72
85
12
I1
71
73
74
82
16
17
4
115
117
119
108
116
142
K2
N1
R1
N2
N3
P1
P2
P3
S1
S2
43
130
101
11
13
15
118
94
69
I2
J1
J2
K1
14
26
29
63
C1
C2
90
75
76
77
80
9
58
113
114
2
55
62
92
3
81
8
65
38
49
50
47
48
33
53
52
51
41
105
40
139
31
69
94
10
R2
W1
88
54
12
S1
S2
W2
H1
32
H3
H4
141
H5
100
99
140
60
106
59
M
86
79
78
36
129
126
125
5
6
7
84
L
N3
42
131
131



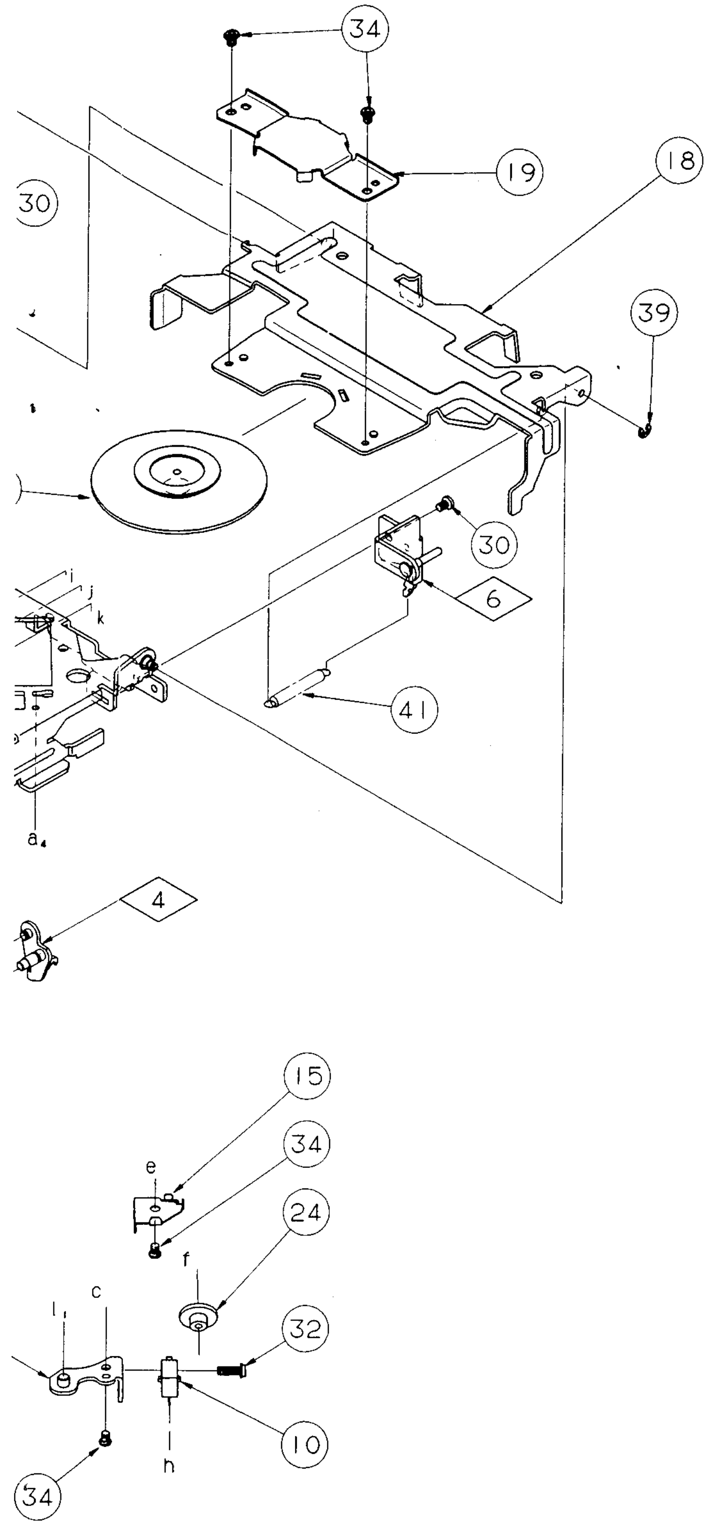
NO	PART NO.	DESCRIPTION	QTY
1	966-0256-02	L-CHASSIS-ASSY	1
2	966-0257-02	DETECT-PD-ASSY	1
3	966-0258-01	ROLLER-PR-ASSY	1
4	966-0259-01	ROLLER-PL-ASSY	1
5	966-0260-01	SMG-PLATE-ASSY	1
6	966-0261-02	LOCK-LRR-ASSY	1
7	966-0262-01	SHIFT-PR-ASSY	1
8	966-0263-01	SIDE-PR-ASSY	1
9	966-0264-01	P-CHANGE-P-ASSY	1
10	966-0265-00	D-BRKT-RR-ASSY	1
11	966-0266-01	SHIFT PL-ASSY	1
12	966-0267-00	D-BRKT-RL-ASSY	1
13	966-0268-01	FRONT-P-ASSY	1
14	966-0270-01	LOCK-LFC-ASSY	1
15	966-0271-00	JOINT L-ASSY	2
16	966-0272-00	K-CHANGE-P-ASSY	1
17	966-0273-01	K-GEAR-B-ASSY	1
18	966-0274-01	SIDE-PL-ASSY	1
19	966-0276-00	V-CHASSIS-ASSY	1
20	966-0277-00	SW-LINK-ASSY	1
21	966-0278-01	GEAR PLATE-ASSY	1
22	966-0279-01	C-LINK-ASSY	1
23	966-0280-01	MG-PLATE-ASSY	1
24	966-0281-00	MG-LOCK-P-ASSY	1
25	966-0282-01	UPPER-PL-ASSY	1
26	966-0283-01	SLIDE-PL-R-ASSY	1
27	966-0284-01	SLIDE-PL-L-ASSY	1
28	966-0285-01	REAR PANEL-ASSY	1
29	966-0293-01	SP-PLATE R-ASSY	1
30	966-0294-01	SP-PLATE L-ASSY	1
31	968-0050-01	DRIVE UNIT	1
32	099-9831-00	MAIN PWB	1
33	001-0563-00	LED	1
34	013-3808-11	SWITCH	4
35	020-0394-00	DC-MOTOR *UP/DOWN	1
36	020-1504-00	DC-MOTOR *LOADING	1
37	051-1743-00	IC *INTERRUPTER	1
38	051-1765-00	IC *AN6608	1
39	060-0252-00	PHOTO-TR	2
40	074-0922-08	OUTLET SOCKET *8P	1
41	099-9917-00	PWB *LED	1
42	099-9919-00	SWITCH PWB (1/5)	1
43	099-9919-00	SWITCH PWB (2/5)	1
44	099-9919-00	SWITCH PWB (3/5)	1
45	099-9919-00	SWITCH PWB (4/5)	1
46	099-9919-00	SWITCH PWB (5/5)	1
47	111-4321-93	FILM-R *1/4W 4.3k	1
48	111-7521-93	FILM-R *1/4W 7.5k	1
49	114-7581-11	FILM-R *1W 0.75	1
50	171-2233-06	CERAMIC-C 0.022 μF	1
51	172-1041-11	POLYESTER-C 0.1 μF	1
52	183-1073-21	ELECTRO-C 10V 100 μF	1
53	345-4205-00	SPACER	1
54	345-5089-00	CH-SHEET	1
55	345-5151-00	CLAMPER-H-SHEET	1
56	620-0216-02	THRUST PLATE B	1
57	620-0393-00	MG-EJECT PLATE	1
58	620-0414-02	DETECT PLATE-S	1
59	620-0420-01	L-MOTOR PLATE	1
60	620-0421-00	L-MOTOR-H-PLATE	1
61	620-0432-00	DISC-L-PLATE	1
62	620-0435-01	SPL-PLATE-R	1
63	620-0453-01	SIDE PANEL R	1
64	620-0455-01	SIDE PANEL L	1
65	620-0472-00	SPRING-H-PLATE	1
66	621-0146-02	V-WORM	1
67	621-0147-01	V-GEAR A	1
68	621-0149-01	MG-STOPPER	1
69	621-0200-02	DMP-HOLDER A-DL	4
70	621-0206-00	DISC ROLLER B	1
71	621-0209-00	UG-RO-SLEEVE	2
72	621-0210-00	UP-ROLLER	2
73	621-0211-00	UP-RO-SLEEVE	2
74	621-0212-00	R-GEAR-A	3
75	621-0213-00	R-GEAR-B	1
76	621-0214-00	R-GEAR-C	1
77	621-0215-00	L-RO-SLEEVE	2
78	621-0216-00	L-MOTOR GEAR	1
79	621-0217-00	P-GEAR-A	1
80	621-0218-00	P-GEAR-B	1
81	621-0219-01	P-GEAR-C	1
82	621-0222-00	K-GEAR-A	1
83	621-0227-00	V-GEAR B	1
84	621-0229-01	RACK	1
85	622-1031-01	UP-ROLLER SHAFT	1
86	622-1032-01	P-GEAR PIN-A	1
87	622-1033-00	UD-GUIDE ROLLER	3
88	622-1034-01	D-BRKT-ROLLER	2
89	622-1035-01	GEAR-PL-ROLLER	2
90	622-1042-01	SLIDE-PL-ROLLER	2
91	622-1043-00	UG-ROLLER SHAFT	1
92	622-1051-00	SPRING PIN	1
93	629-0031-00	GEAR DAMPER	1
94	629-0047-01	DAMPER-DL	4
95	629-0049-01	LOADING ROLLER	1
96	714-2003-11	MACHINE SCREW	2
97	714-2003-81	MACHINE SCREW	29
98	714-2603-81	MACHINE SCREW	17
99	714-2606-81	MACHINE SCREW	1
100	716-0761-01	SCREW	5
101	716-0791-00	SCREW	2
102	716-1507-00	SCREW	3
103	716-1556-00	SCREW	2
104	716-1557-00	SCREW	2
105	716-1569-00	SCREW	2
106	738-2025-17	PRECISION SCREW	4
107	743-1500-10	E-RING	18
108	743-2000-10	E-RING	8
109	743-2500-10	E-RING	1
110	744-0031-10	E-RING	5
111	746-0761-00	WASHER	13
112	746-0829-00	WASHER	4
113	750-3036-00	DETECT-PD-SP	1
114	750-3037-00	DETECT-PS-SP	1
115	750-3038-00	ROLLER-P-SPRING	2
116	750-3039-00	SHIFT-PR-SPRING	1
117	750-3040-01	DLP-SPRING	1
118	750-3041-00	DRIVE-SP-F	2
119	750-3042-01	DRIVE-SP-R	1
120	750-3043-00	SW-LINK SPRING	1
121	750-3044-00	GEAR PLATE-SP	1
122	750-3045-00	C-LINK SPRING	1
123	750-3046-00	MG-EJECT SPRING	1
124	750-3047-00	MG-LOCK SPRING	1
125	750-3056-00	LOCK-LRR-SPRING	1
126	800-4911-60	VINYL-COAT-WIRE	1
127	801-4908-60	VINYL-COAT-WIRE	1
128	802-4907-60	VINYL-COAT-WIRE	1
129	802-4911-60	VINYL-COAT-WIRE	1
130	804-5008-60	VINYL-COAT-WIRE	2
131	805-5014-60	VINYL-COAT-WIRE	2
132	816-2128-00	LEAD WIRE	1
133	816-2130-00	LEAD WIRE	1
134	816-2131-00	LEAD WIRE	1
135	816-2134-00	LEAD WIRE	1
136	816-2135-00	LEAD WIRE	1
137	816-2236-00	LEAD WIRE	1
138	816-2241-00	SUMI CARD *9P	1
139	746-0846-00	WASHER	2
140	099-9918-00	FLEX PWB	1
141	620-0389-00	TR-COVER	1
142	345-7368-01	INSULATOR	1

■DRIVE UNIT: 968-0050-01


42
34
19
18
7
30
14
39
3
34
27
26
30
6
22
34
5
41
28
40
b₁
a₁
a₃
i
j
k
17
40
a₂
b₂
a₄
37
20
4
l₂
29
g
40
21
d
9
25
35
44
43
15
34
e
24
f
⊕
⊖
11
12
⊕
⊖
32
l₁
c
2
10
13
23
h
b₁
g
45
47
34
36
a₁
l₂
a₃
a₄
48
34
h
8
16
l₁
c
d
e
f
b₂
46
1
38
33
31
34

NO	PART NO.	DESCRIPTION	QTY
1	099-9836-01	FLOAT PWB	1
2	966-0150-02	SW-PLATE ASSY	1
3	966-0286-01	DRIVE-P-ASSY	1
4	966-0287-00	SP-LINK-FR-ASSY	1
5	966-0288-00	SP-LINK-FL-ASSY	1
6	966-0289-00	D-PLATE-RR-ASSY	1
7	966-0290-00	D-PLATE-RL-ASSY	1
8	966-0291-00	DR-MO-BRKT-ASSY	1
9	969-0002-00	PICK UP U-ASSY	1
10	013-3808-11	SWITCH	1
11	020-1508-00	DC-MOTOR *SLED	1
12	020-1509-00	DC-MOTOR *SPINDLE	1
13	345-5112-00	MOTOR SHEET S	1
14	620-0202-00	HOLD PLATE	1
15	620-0204-03	SP PLATE A	1
16	620-0328-00	SLID-S-PLATE	1
17	620-0440-01	SP-PLATE-F	1
18	620-0458-01	CLAMPER LINK	1
19	620-0460-00	CLAMPER PLATE	1
20	621-0123-00	SCREW HOLDER	1
21	621-0168-01	LS-HOLDER A	1
22	621-0169-01	LS-HOLDER B	1
23	621-0170-01	DR-GEAR A	1
24	621-0171-01	DR-GEAR-B	1
25	621-0172-01	DR-GEAR C	1
26	621-0230-00	FPC-GUIDE	1
27	621-0231-00	CLAMPER	1
28	624-0003-01	SLIDE SHAFT	1
29	624-0012-00	LEAD SCREW	1
30	714-2003-81	MACHINE SCREW	2
31	714-2004-81	MACHINE SCREW	1
32	716-0791-00	SCREW *M2x5.7	1
33	716-1445-01	PWB-SCREW	1
34	716-1468-00	SCREW	12
35	716-1524-00	SCREW	1
36	739-1725-17	PRECISION SCREW	2
37	739-1730-17	PRECISION SCREW	2
38	739-2025-15	PRECISION SCREW	2
39	743-1500-10	E-RING	1
40	743-2000-10	E-RING	4
41	750-3050-01	CLAMPER-SP-R	1
42	750-3051-00	CLAMPER-SP-L	1
43	800-4904-60	VINYL-COAT-WIRE *BLK	1
44	802-4904-60	VINYL-COAT-WIRE *RED	1
45	074-0924-05	OUTLET SOCKET *5P	1
46	074-0924-13	OUTLET SOCKET *13P	1
47	074-0923-13	OUTLET SOCKET *13P	1
48	074-0923-11	OUTLET SOCKET *11P	1

ME



NO	PART NO.	DESCRIPTION	QTY
1	099-9836-01	FLOAT PWB	1
2	966-0150-02	SW-PLATE ASSY	1
3	966-0286-01	DRIVE-P-ASSY	1
4	966-0287-00	SP-LINK-FR-ASSY	1
5	966-0288-00	SP-LINK-FL-ASSY	1
6	966-0289-00	D-PLATE-RR-ASSY	1
7	966-0290-00	D-PLATE-RL-ASSY	1
8	966-0291-00	DR-MO-BRKT-ASSY	1
9	969-0002-00	PICK UP U-ASSY	1
10	013-3808-11	SWITCH	1
11	020-1508-00	DC-MOTOR *SLED	1
12	020-1509-00	DC-MOTOR *SPINDLE	1
13	345-5112-00	MOTOR SHEET S	1
14	620-0202-00	HOLD PLATE	1
15	620-0204-03	SP PLATE A	1
16	620-0328-00	SLID-S-PLATE	1
17	620-0440-01	SP-PLATE-F	1
18	620-0458-01	CLAMPER LINK	1
19	620-0460-00	CLAMPER PLATE	1
20	621-0123-00	SCREW HOLDER	1
21	621-0168-01	LS-HOLDER A	1
22	621-0169-01	LS-HOLDER B	1
23	621-0170-01	DR-GEAR A	1
24	621-0171-01	DR-GEAR-B	1
25	621-0172-01	DR-GEAR C	1
26	621-0230-00	FPC-GUIDE	1
27	621-0231-00	CLAMPER	1
28	624-0003-01	SLIDE SHAFT	1
29	624-0012-00	LEAD SCREW	1
30	714-2003-81	MACHINE SCREW	2
31	714-2004-81	MACHINE SCREW	1
32	716-0791-00	SCREW *M2x5.7	1
33	716-1445-01	PWB-SCREW	1
34	716-1468-00	SCREW	12
35	716-1524-00	SCREW	1
36	739-1725-17	PRECISION SCREW	2
37	739-1730-17	PRECISION SCREW	2
38	739-2025-15	PRECISION SCREW	2
39	743-1500-10	E-RING	1
40	743-2000-10	E-RING	4
41	750-3050-01	CLAMPER-SP-R	1
42	750-3051-00	CLAMPER-SP-L	1
43	800-4904-60	VINYL-COAT-WIRE *BLK	1
44	802-4904-60	VINYL-COAT-WIRE *RED	1
45	074-0924-05	OUTLET SOCKET *5P	1
46	074-0924-13	OUTLET SOCKET *13P	1
47	074-0923-13	OUTLET SOCKET *13P	1
48	074-0923-11	OUTLET SOCKET *11P	1

MEMO

Printed in Japan 298-4865-00 APR. 1993 ©